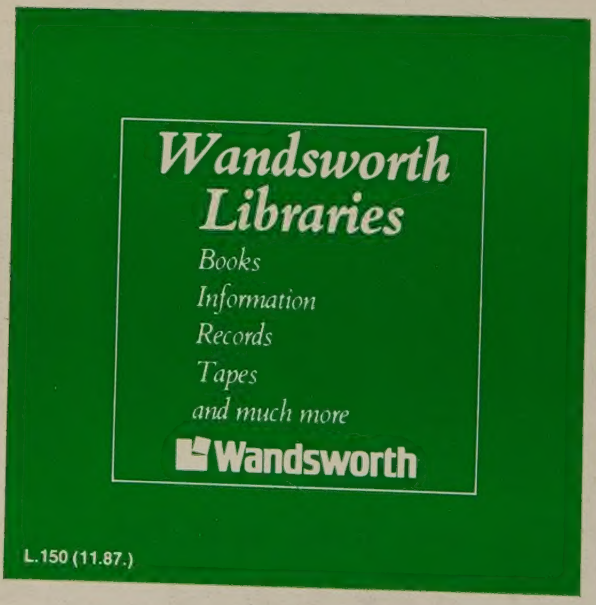
WANDSWORTH
PUBLIC LIBRARIES



101 089 173 DF

BATTERSEA
PUBLIC
LIBRARIES

FROM A PHOTOGRAPH TAKEN AT THE S.M.E. CHATHAM, REPRODUCED BY "HUEBANDS PROCESS"

Yours very faithfully
J. F. Burgoyne

HISTORY

OF THE

CORPS OF ROYAL ENGINEERS

BY

WHITWORTH PORTER

MAJOR-GENERAL ROYAL ENGINEERS

VOLUME I

PATTERSON PUBLIC LIBRARY

LONDON

LONGMANS, GREEN, AND CO.

AND NEW YORK: 15 EAST 16th STREET

1889

All rights reserved

E8000648 14
940.41242 PORT
101 089 173
Reference Library
No 4630
BATTERSEA PUBLIC LIBRARIES

LONDON:
PARDON AND SONS, PRINTERS,
WINE OFFICE COURT, FLEET STREET, E.C.

WITH THE GRACIOUS PERMISSION OF

HER MAJESTY THE QUEEN,

THIS WORK IS

Dedicated

TO THE MEMORY OF THE PRINCE CONSORT,

AS A HUMBLE AND GRATEFUL TRIBUTE
TO THE UNVARYING INTEREST
DISPLAYED TOWARDS THE CORPS OF ROYAL ENGINEERS
BY THAT WISE AND FAR-SEEING PRINCE,

BY HER MAJESTY'S MOST DEVOTED HUMBLE SERVANT
AND SUBJECT,

WHITWORTH PORTER.

PREFACE.

It seems somewhat strange that no history of the Corps of Royal Engineers should have been as yet presented to the public. For nearly two centuries, since the date when the officers of this service were first united into a compact body, their career has been intimately connected with the military history of the Empire, and even long before that time they had as individuals gained renown in the important functions which in those earlier days they fulfilled. In spite of this vast accumulation of faithful service no connected account exists, and it has been left to those who are interested in the subject to grope amidst a mass of mouldering records, to exhume here and there isolated facts bearing on the subject. Other regiments have long since found their biographers, the result of whose labours has been the formation of an admirable encyclopædia of military history. The student looks, however, in vain amongst these for any narrative of the services of the Engineers.

The cause of this hiatus may possibly be thus explained. It seems clear that the task should fall to the lot of one who has had intimate relations with the Corps, and whose experience in connection with it would enable him to treat the subject adequately; but such a man, whilst in the active exercise of his profession, has not sufficient time available for the lengthened and laborious research necessary for the undertaking. Hitherto, Engineers have generally clung to the service until old age or infirmity has compelled them to seek repose in retirement. They have consequently been unwilling and, indeed, physically unable afterwards to attempt such a work. Of late, however, this has been much

changed. A grateful country has decreed that her officers shall not be permitted to spend too much of their lives in her service, and now they are mostly pensioned off whilst still in middle life, many of them with energies by no means exhausted.

One of the consequences of the adoption of this new principle has been the production of the present volumes. They are the result of diligent research, extending over several years, on the part of one who has sought thus to occupy such talents as it has pleased Providence to leave unimpaired. I trust that I have in this way created, at all events, a framework which may be developed at some future time in the hands of a more capable historian.

It was my intention, when first I began my task, to have embraced the Indian branch of the Corps. I soon discovered that its records were so numerous and full of picturesque interest that it demanded separate treatment. To include it here would have been either to treat it most inadequately, or to produce a book far too voluminous for the ordinary reader. Indeed, as it is, I have been compelled to suppress much that I consider of secondary importance, in order to keep within reasonable limits. As an instance, I have not referred to our New Zealand wars, although undoubtedly the Royal Engineers bore their fair share in these as in other more important campaigns. I simply mention this to show that the omission is not through neglect but of design. The history of the Indian Engineers remains to be written, and a valuable and interesting record it will prove. It is to be hoped that before long some member of that service will supply the void. The names of two men pre-eminently qualified for the task naturally suggest themselves—Lieutenant-General George Chesney and Colonel Henry Yule. In the hands of either of these, full justice would be done to a most attractive subject.

I had also intended to append a complete Roll of the Corps from the beginning of the eighteenth century, and had prepared all the earlier portion of the list for the purpose. As, however, I found that Captain Conolly had compiled a similar Roll, but on a far more elaborate scale, I abandoned the idea. Even as I had drawn it up much space must necessarily have been allotted to it, and this would have added largely to the bulk of the

volumes. It is, I believe, intended that Conolly's Roll should be completed to date and published by the Royal Engineers' Institute as a separate work.

I would wish to point out that I have in no way attempted to produce a complete narrative of the various military operations to which I have referred. I have selected only such portions as are connected with the Engineers, either from their being actors therein, eye-witnesses, or narrators. It must not be supposed that by this mode of treatment I desire to intimate or suggest that the other branches of the service have in any way occupied a subordinate position. Simply, their deeds do not enter into the scheme of these volumes.

I may remark that the coloured portraits of Engineer Officers that have been given were not selected with an idea that the originals were men of distinction in the Corps. With the exception of Ensign Gother Mann, who lived to become Inspector-General of Fortifications, none of them have achieved any considerable position. They were merely taken in order to show the style of uniform at different periods.

In the compilation of this work I have received very valuable assistance from my brother officers and others. Chief amongst these in importance must be named the late Captain Conolly, many years of whose life were spent in the accumulation of a vast mass of varied information on the subject of the Corps. It is only within the last few months that I have been able to obtain access to these valuable papers as a consequence of their purchase by the Royal Engineers' Institute. Had I been permitted to peruse them earlier I might have been saved much labour expended in going over ground already explored by him. Still, it is perhaps as well that two independent researches should have been prosecuted. The result is that, whilst I have enriched the earlier portion of my history with many details that I had failed to discover for myself, I have at the same time added much which Captain Conolly either overlooked, or to which he had not obtained access. He intended writing a history of the Corps himself, and was engaged in the earlier portion of the work at the time of his death. Since that event his papers have remained undisturbed until the purchase above referred to.

Amongst the other officers whose aid I desire to acknowledge with thanks, are Major-Generals The Hon. George Wrottesley, Sir Edmund Du Cane, Sir John Cowell, R. Duff, and E. R. James; Colonels H. Yule, Thackeray, the Hon. A. Parnell, and G. Grover; also Colonel Nicolls, R.A., who has furnished me with much valuable information about Sir William Green, including Mrs. Green's interesting diary.

Major Day, the Secretary of the Institute, has in many ways rendered me the most important assistance; nor must I omit the names of Major Andrews and Lieutenant G. Brown, of the Coast Battalion, who have been most zealous in their endeavours to procure for my use such information as was to be obtained from the records of the Horse Guards.

Lastly, I would also include Mr. Thornton, the intelligent Royal Engineer Librarian at the War Office, on whose assistance I could always reckon in my researches amongst the valuable collection of works under his charge.

But for the assistance rendered by these and others it would have been impossible for me to produce a history, even as satisfactory as the one which I now submit to the judgment of the Corps and the general public.

WHITWORTH PORTER.

28, Cheniston Gardens, Kensington,
January 10*th*, 1889.

CONTENTS.

PART I.—MILITARY HISTORY.

CHAPTER I.

Introductory.

PAGE

Civil and Military Duties of the Corps—The Exhibition of 1851 and the Prince Consort—Tendency towards Specialism—The Malta Opera House and its Acoustic Properties—"Scientific Soldiers" in "The World" Newspaper—Lord Wolseley on the Training of a General—General Smythe's View of the Royal Engineers—Sir George Trevelyan on the Athletic Successes of the Corps 1

CHAPTER II.

From the Norman Conquest to the Close of the Sixteenth Century.

The Dawn of Engineering Science — The King's Engineers from the Conquest—Sappers in the Scotch and Welsh Wars of Edward I.—The Attillator — Sir John Crabbe — The Siege of Calais in 1346 — Subsequent Establishment of Engineers in Calais—Engineer Staff at the Tower in 1370—Siege of Harfleur and Battle of Agincourt—William Pawne—The Captain of the Pioneers—Coast Defences under Henry VIII.—Sir Richard Lee—John Rogers—Siege of Boulogne—Potinari—French Naval Attack in the Channel—Loss of the *Mary Rose* — John Brend — Thomas Pettyt — Fortifications of Berwick — Sir William Pelham—Siege of Leith—Defence of Havre—Leonard Digges—Disgrace of Pelham—Befriended by Leicester—His Campaign in the Low Countries, and Death—The Spanish Armada—Preparations for Defence—Expedition to Ireland 7

CHAPTER III.

The Seventeenth Century.

PAGE

Engineers under Charles I.—The Commonwealth and Charles II.—Establishment of Engineers for England and Ireland — Duties of the Surveyor-General of the Ordnance—Of the Chief Engineer—Of the Inferior Engineers—Instructions for Jacob Richards as Travelling Engineer—His Report—Attempted Robbery of the Regalia by Blood —Their Rescue by Talbot Edwardes—Details of Ordnance Trains in 1692—Diary of Jacob Richards in the Flanders War—The King's Company of Engineers — Establishment of Engineers in 1697 — Reductions consequent on Peace of Ryswick — Formation of the First Train for Peace Duties 41

CHAPTER IV.

Gibraltar, 1704-1778.

The Beginning of the War of the Spanish Succession—Capture of Gibraltar by the British — The Prince of Hesse-Darmstadt appointed Governor—Siege by the Spaniards — Arrival of Joseph Bennet — Breaches Established—Assault Repulsed—Arrival of Talbot Edwardes with other Engineers — Conclusion of the Siege — Departure of Edwardes -Bennet made Chief Engineer—His Mission to Barbary —Treaty of Utrecht—Poverty of the Board of Ordnance—Their Correspondence—The Second Siege, in 1727—Court-Martial on Lieutenant Mullar—General Irwin on Engineer Quarters—Description of the Fortress of Gibraltar 62

CHAPTER V.

The Siege of Gibraltar, 1779-1783.

Commencement of the Siege of Gibraltar — Mrs. Green's Journal— Holloway's Diary — Drinkwater's Narrative — Engineers Present — Green's Lodge—Construction of Besiegers' Batteries—Admiral Duff — Experiments with Shell Guns and Light-Balls—The First Relief under Rodney—Small-Pox—Fire-Ships — Advanced Batteries constructed by the Spaniards — Lieutenant Booth — His Plans — His Subsequent Illness — Second Relief under Admiral Darby — Bombardment of the Town — Execution of two R. M. Artificers for Plundering—The Sortie—Great Damage to the Besiegers' Works —The Ten Great Floating Batteries—Galleries formed in the Rock —Second Bombardment—Attack by the Floating Batteries—Their Destruction—Conclusion of the Siege—Rewards to the Principal Officers—Cost of the Defence 82

CHAPTER VI.

The War of the Spanish Succession, 1702-1713.

PAGE

Formation of Train for Service in the Low Countries—Colonel Blood appointed to the Command—Engineers under him—Siege of Venloo—Blood at the Battles of Blenheim and Ramilies—His Death at Brussels—Michael Richards—John Armstrong—His Services on Marlborough's Staff—Demolition of the Fortifications of Dunkirk—Train for Cadiz—Attacks on Cadiz and Vigo—Portugal Train under Borgard—Barcelona Train—Carleton's Memoirs—Siege of Barcelona—Its Capture, and that of Valenza—Borgard Wounded, and Mauclere placed in Command of the Train—Defence of Barcelona by Lewis Petit—Siege of Alcantara—Death of Mauclere—Isaac Petit killed at Alicante—New Train formed under Michael Richards—Battle of Almanza and Defeat of Galway—Defence of Denia and Tortosa—Consolidation of Trains—Capture of Minorca—Lewis Petit appointed Lieutenant-Governor, and Peter Durand Chief Engineer—Loss of Denia—Siege of Alicante—Explosion of Mine and Death of John Richards—Peace of Utrecht—Engineers in America and the West Indies 110

CHAPTER VII.

1713-1748.

Establishment of Engineers in 1714—Michael Richards appointed Surveyor-General, and John Armstrong Chief Engineer—Formation of a Corps of Engineers—Separation of Artillery—Establishments for Minorca and Gibraltar—Scotch Rebellion of 1715—Reports on the Fortifications—Irish Engineers—Code of Instructions for Engineers—Renewal of the War with Spain—Train appointed—Attack on Cartagena—Foundation of Royal Military Academy—Death of Armstrong—Train for Flanders—Battles of Dettingen and Fontenoy—Engineer Promotions in 1744—Capture of Louisburg—Trains for Newfoundland and Nova Scotia—Scotch Rebellion of 1745—Attempt on l'Orient—Brigade of Engineers for Flanders in 1747—Battle of Val—Defence of Bergen-op-Zoom—Engineers in India—List of the Corps in 1748 139

CHAPTER VIII.

1748-1763.

Military Survey of Scotland under Watson and Roy—Grievances of the Corps—Their Agent Boddington—War in America with the French—Braddock's Disaster—Victory at Crown Point—Augmentation in

PAGE

1755—The Roster on that Date—Military Reconnaissances in the South of England—Cunningham at Minorca—Siege of St. Philip's—Its Capture by the French—Dutch Engineers in America—Military Rank granted to the Engineers in 1757—Chief Engineer Skinner's Commission—Expeditions against Rochefort, St. Malo, and Cherbourg—War in America—Capture of Louisburg—Failure at Ticonderoga—New Establishment of Engineers in 1759—Capture of Guadaloupe—Attack on and Capture of Quebec—French Attempt to recover the Place—Capture of Martinique, the Havannah, and Belleisle . . 167

CHAPTER IX.

1763-1799.

Peace of Paris—Restoration of Minorca—Pensions for Widows of Engineers—Pay of Chief Engineer increased—Separation of Indian Engineers—Abolition of Engineer Grades—First General Brevet—The American Revolution—Battle of Bunker's Hill—Occupation of New York, Philadelphia, and Ticonderoga—Defence of Savannah—Capture of Charlestown—Surprise of Jersey—Second Siege of Minorca Close of the War—Corps of Invalid Engineers—Establishment of Extra Pay—List of the Corps in 1784—Title of Royal Engineers granted in 1787—Successive Augmentations—War in the Low Countries—Siege of Valenciennes—Death of Moncrieff—Capture of French West Indian Islands and of Corsica—Expedition to Holland in 1799—Correspondence between Howe and Cornwallis—Death of Lieutenant-Colonel Hay—Close of the Campaign—Dress of the Royal Engineers. 200

CHAPTER X.

1800-1809.

Capture of Malta by Bonaparte—His Occupation of Egypt—Military Mission to Constantinople—Expedition under Abercrombie—Death of Mackerras, and Fletcher taken Prisoner—Battle of Alexandria—Advance of the Turkish Contingent with Holloway—Battle of El Hanka—Capture of Cairo—Inscription on Pompey's Pillar—Second Expedition to Egypt in 1807—Battle of Maida and Capture of Scylla—Occupation of Cape Town, Buenos Ayres, and Monte Video—Bombardment of Copenhagen, and Seizure of the Danish Fleet—First Peninsular Campaign—Battles of Roleia and Vimiera—Lieutenant Wells taken Prisoner—Advance of Sir John Moore into Spain—The Retreat to Corunna—Walcheren Expedition—Bombardment and Capture of Flushing—Destruction of the Docks—Sir J. Jones's Criticisms on the Leaders of the Force. 228

CHAPTER XI.

The Peninsular War, 1809-1812.

PAGE

Passage of the Douro—Battle of Talavera—The Lines of Torres Vedras—Retreat of the British Army—Advance of Massena—Battle of Busaco—The Lines occupied by Wellington's Army—Jones's Reports—Burgoyne's Journal—Division of the Lines into Districts—Destruction of Fort Concepçion—Blockade of Cadiz—Death of Captain Lefebure—Battle of Barrossa—Pitts' Journal—Defence of Tarifa—Siege of Ciudad Rodrigo—Its Capture—Remarks on the Siege by Captain Burgoyne. 256

CHAPTER XII.

The Three Sieges of Badajoz, 1811-1812.

Description of Badajoz—Project of Attack—Opening of the First Siege—Attack on Fort Christoval—Sortie of the Garrison—Raising of the Siege—Its Resumption after the Victory of Albuera—Deaths of Forster, Patten, and Hunt—Second Raising of the Siege—Cause of the Failure—The Third Siege—Sortie from the Town—Fletcher Wounded—Impediments by Bad Weather—Death of Mulcaster—Assault of Fort Picurina—Attempt to Destroy the Batardeau—Preparations for Storming—Escalade of the Castle—Failure of the Assault at the Breaches—Escalade of San Vincente Bastion—Capture of the Fortress—Losses of the Engineers—Descriptions of the Assault by Vetch, Pitts, and McCarthy—Lord Wellington's Despatches 288

CHAPTER XIII.

1812-1813.

Destruction of the Bridge of Almaraz—Siege of the Salamanca Forts—Pitts' Description—Battle of Salamanca—Entry into Madrid—Capture of the Retiro—Siege of Burgos—Description of the Castle—Project of Attack—Capture of Hornwork—Failure of Assault on Outer Line—Lord Wellington's Head-quarters—Mine Exploded and Breach Assaulted—Failure of the Attempt—Second Mine Exploded and Outer Line Captured—Lieut.-Colonel Jones Wounded—Sorties of the Garrison—Failure of Assault on Inner Line—The Siege Raised—Burgoyne's Remarks—Pitts' Journal—Retirement of the British Army into Portugal—Burgoyne at El Boden—Battle of Vittoria—Blockade of Pamplona 312

CHAPTER XIV.

1813-1814.

PAGE

Description of San Sebastian—Project of Attack—Commencement of Siege —Capture of Convent of San Bartolomeo—Reid's Drain—Explosion of Mine and General Assault—Jones Wounded and taken Prisoner—Failure of the Assault—Suspension of the Siege awaiting Ammunition—Resumption of Active Operations—Development of the Attack —Capture of the Island of Santa Clara—Swimming Feat of Corporal Evans—Second Assault—Critical Moment—Fire on the Ramparts over the Heads of the Stormers—Success of the Assault—Losses of the Engineers—Bombardment of the Castle—Its Surrender—Burgoyne's Criticisms—Memorial from the Officers of Royal Engineers about their Allowances—Passage of the Adour—Difficulties of the Undertaking—Design of the Bridge—Organization of the Flotilla—Crossing of two Brigades by Boats—Formation of the Bridge . . 335

CHAPTER XV.

The Second American War, 1812-1815.

Opening of the War in 1812—Capture of Fort Detroit by the Canadians — Failure of Subsequent Attempts at Invasion by the Americans—Capture of Washington—Destruction of Public Buildings—Attack on New Orleans—Burgoyne's Journal—Description of the Defences of New Orleans—Advance against the Lines—The Attack Repulsed and General Pakenham Killed—Council of War—Extraordinary Revelation—Lieutenant Wright Killed—Attack on Fort Bowyer—Its Surrender—Close of the War 357

CHAPTER XVI.

1814-1830.

Joint British and Prussian Expedition to Holland—Lieutenant Sperling's Journal—Attack on French Fleet at Antwerp—Its Failure—Scheme for Assault of Bergen-op-Zoom—Sperling's Account—First Success and Subsequent Failure—Peace of 1814—Return of Napoleon from Elba—Battle of Waterloo—Sperling's Account—Oldfield's Account—Misbehaviour of a Company of Sappers—Wellington's Description of the Battle to Jones—Burgoyne's Memo.—Capture of Péronne—Engineer Equipment—Close of War—Jones and the Netherland Fortresses—His Mission to Holland in 1830—Bombardment of Algiers in 1816—Burgoyne's and Whinyates' Accounts 367

CHAPTER XVII.

1796-1854.

PAGE

Successive Augmentations—Lord Cornwallis's Correspondence—Creation of Post of Inspector-General of Fortifications—Increase of Pay in all Ranks—Protest against Promotion by Army Rank—Distribution of the Honours of the Bath unsatisfactory to the Corps—Peace Reductions—The Hanoverian Engineers—Block in Promotion—Augmentation in 1825—New Scale of Retirement and Abolition of Invalid Engineers—Further Augmentation in 1846—Establishment of Seconded List—Additional Battalion on Account of Russian War . 397

CHAPTER XVIII.

The Russian War, 1854.

Sir John Burgoyne's Mission to Constantinople—His Visit to Paris—He proceeds to Gallipoli and Varna—Burke's Report on the Danube Position—The Lines of Gallipoli—Advance on Varna—Successful Defence of Silistria—Death of Lieutenant Burke—Bridge across the Danube—Fire at Varna—Gallantry of Sapper James Cray—Expedition to the Baltic—Capture of Bomarsund—Destruction of the Forts—Landing in the Crimea—Battle of the Alma—Death of General Tylden—The Flank March—Description of Sebastopol—First Bombardment—Death of Colonel Alexander—Battles of Balaklava and Inkerman—Preparations for Winter—Fearful Storm and Consequent Losses—Capture of Tryon's Rifle Pits—The Road Question . . 409

CHAPTER XIX.

The Russian War, continued, 1855.

Description of the British Attacks at the beginning of 1855—Difference of Opinion between Burgoyne and Bizot as to an Attack on the Malakoff—Appeal to the Emperor at Paris—Niel sent to Report on the Position—Scarcity of Fuel and its Results—Lieutenant Drake's Gallantry—Commencement of the Railway—General H. Jones ordered to Relieve Sir J. Burgoyne—Revised Scheme of Attack—Advance of the Russians on the Careening Bay Ravine, the Mamelon, and the Dockyard Creek—Description of the Works of Attack in April—The Electric Telegraph—The April Bombardment—Capture of Rifle Pits—Arrival of the Sardinian Army—Capture of The Quarries, Mamelon, and *Ouvrages Blancs*—Unsuccessful Assault on the Redan and Malakoff—Lieutenant Donnelly and the Cemetery—Death of Lord Raglan—The September Bombardment and General Assault—Retreat of the Russians to the North Side—Occupation of the South Side by the Allies—Engineer Promotions—Destruction of the Docks and White Barracks—Colonel Lake at Kars 438

CHAPTER XX.

The Indian Mutiny, 1857-1859.

PAGE

Mutiny at Meerut—Revolt at Delhi—Force assembled to recover the City—Description of Delhi—Arrival of Siege Train—Erection of Batteries—Detail of Assaulting Columns—Blowing in the Kashmere Gate—Progress of the First and Second Columns—Death of Nicholson—Completion of the Capture—Engineer Losses—Defence of Lucknow—Description of the Residency—Mining and Countermining—First Relief under Outram and Havelock—Second portion of the Defence—Relief by Sir C. Campbell—Outram holds the Alumbagh—Return of Sir Colin—Description of Lucknow—Attack by Campbell and Outram—Capture of the City—Gallantry of Innes and Prendergast—Capture of Jhansi—Journal of proceedings of 4th and 23rd Companies of Royal Engineers 474

CHAPTER XXI.

The China War, 1857-1860.

Acquisition of Hong Kong—Attack on the Bogue Forts—Murder of Captain da Costa—Death of Captain Cowper—Assault and Capture of Canton—Destruction of Forts—Capture of Namtow—Death of Captain Lambert—Expedition to the Peiho in 1859—Attempted Assault—Its Failure—Renewed Expedition to the Peiho in 1860—Composition of Force—Landing at Peytang—Land Attack on Forts—Their Capture—Advance on Pekin—Destruction of Summer Palace—Conclusion of the War 500

Appendix—Royal Warrants 517

ILLUSTRATIONS.

Field-Marshal Sir John Burgoyne, Bart., G.C.B. .. .. *Frontispiece*

COLOURED PORTRAITS ILLUSTRATIVE OF UNIFORMS AT DIFFERENT EPOCHS.

Captain John Romer, Engineer, cir: 1710 .. .. } .. *To face page* 215
Practitioner Engineer and Ensign Gother Mann, 1763 }

Captain William Fyers, 1792 .. .. ,, ,, ,, 227

Major William Nicholas, 1812 .. .. ,, ,, ,, 305

The Author, 1846 . .. . ,, ,, ,, 407

SKETCH PLANS.

Gibraltar .. .. *To face page* 79

Torres Vedras .. .. ,, ,, ,, 259

Ciudad Rodrigo .. .. ,, ,, ,, 279

Badajoz .. .. ,, ,, ,, 289

Burgos .. .. ,, ,, ,, 319

San Sebastian .. .. ,, ,, ,, 335

Sebastopol .. .. ,, ,, ,, 427

WOODCUTS.

PAGE

Castle of Scylla.. 238

Flushing 250

Cadiz 270

Tarifa 274

Bergen-op-Zoom 370

Delhi 476

ERRATA.

Page 118, line 5, *for* Lewis Borgard, *read* Albert Borgar l.
Page 450, line 24, *for* E. R. Jones, *read* E. R. James.

PART I.—MILITARY HISTORY.

HISTORY OF THE CORPS OF ROYAL ENGINEERS.

CHAPTER I.

Introductory.

Civil and Military Duties of the Corps—The Exhibition of 1851 and the Prince Consort—Tendency towards Specialism—The Malta Opera House and its Acoustic Properties—"Scientific Soldiers" in *The World* Newspaper—Lord Wolseley on the Training of a General—General Smythe's View of the Royal Engineers—Sir George Trevelyan on the Athletic Successes of the Corps.

The Corps of Royal Engineers differs from every other branch of Her Majesty's Service, inasmuch as it is called on to perform not only its duties in connection with military operations, but also many varieties of scientific work of a purely civil nature. There is scarcely a Department of Government in which members of the Corps are not to be found holding high office, purely on account of their scientific attainments. The motto which it bears, "Ubique," is as true in its civil as it is in its military work.

This development of the duties of the Corps is almost entirely the product of the present century. Until after the close of the Peninsular War, we do not often find Engineers employed in other than military, or at least quasi-military, service. The principal exception to this is perhaps the Ordnance Survey of Great Britain, and even that was begun as a military operation, being intended to facilitate the penetration of the wilds of the Highlands by the forces of the Crown. The long peace which followed the overthrow of Napoleon was very unfavourable to the warlike aspirations of the Engineer. Unless his talents were to be utilized in other than military service, it was felt that he had become too expensive a luxury for the economical days that were then dawning upon the country. Reductions had to be made; and if a good reason could not be given against such a course, the pruning knife of the Treasury would surely lop away the fruitless branch.

Even as it was, such a wholesale reduction was carried out, that promotion was brought to a state of utter stagnation. Towards

the middle of this century, grey-headed second captains of Engineers of thirty years' service were not uncommon. Some of these had been subalterns for nearly a quarter of a century. This was the time when the fortunes of the Corps were at their lowest ebb, though even then there were not wanting men in its ranks who had shown, in spite of every discouragement, that they were capable of better things than taking charge of the additions to and repairs of barracks, which had come to be considered the main duty of the Corps.

The first dawn of a brighter time was brought about by means of the work done by the Engineers in the Great Exhibition of 1851. The President of the Board of Trade, Mr. Labouchere, introduced Col. Reid, R.E., to the Prince Consort, and recommended his appointment as Chairman of the Executive Committee. Reid had no sooner accepted the post, than he applied for the assistance of other Engineers. It is not too much to say that but for their science, skill, and thoroughly disciplined organization, the Exhibition would have been shorn of much of its triumphal success. This result was due quite as much to the zeal and intelligence of the rank and file as of the officers. The ubiquitous sapper, as he is called, first earned that title from his multifarious duties in connection with the building in Hyde Park. The Prince Consort never forgot the men who had laboured so hard and with such success in carrying out the brilliant scheme which had emanated from his fertile brain, and who had helped him so strenuously in developing his ideal into the practical outcome of the Crystal Palace.

We have already said that Mr. Labouchere (afterwards Lord Taunton) had selected Col. Reid as the best man to supervise the arrangements connected with the Exhibition. In a minute, written some years after, Sir Henry Cole remarked :—

"The late Lord Taunton, President of the Board of Trade for several years, was accustomed to say that, whenever the Government was in a difficulty in finding an officer of high capacity for civil administration, the right man was sure to be obtained among the officers of Royal Engineers."

Lord Taunton had, it is true, been the man to call the attention of the Prince Consort to the value of the Corps; but it is due to that wise Prince to say that from the moment he was brought into practical contact with its members, he became their hearty and life-long friend. They owe to his memory a debt of gratitude which can never be effaced, for the unvarying support and consideration they obtained from him during the sadly few years that he was spared to them and to his country.

Fortunately for its prosperity, this was an epoch when science was pushing its way more and more into the various branches of the public service. The Engineers, wherever they were tried, had proved themselves capable men, and every new demand for their aid was met by an ample and thoroughly efficient supply. In all the various ways in which brain power was in request, they forced themselves to the front; until now it seems to follow, as a matter of course, that in the establishment of any new branch of the public service requiring scientific knowledge they should invariably be called on to furnish their aid.

One result of this varied and perpetually increasing demand is that they are much given to take up distinct branches of science, and to devote themselves thereto with a zeal and a perseverance which in some cases have rendered their names famous, even beyond the limits of their own country. It is almost certain that where several Engineers are gathered together most branches of science will be represented. An amusing instance of this once occurred to the writer whilst acting as Commanding Engineer in Malta. The Opera House, a fine building erected under the auspices of that most lavish of Governors, Sir Gaspard Le Marchant, had been destroyed by fire. Plans had been drawn up for its replacement by a new theatre which was to be, if possible, completely fire-proof. The then Governor, Sir Charles Stranbenzee, was doubtful how far the proposed mode of construction would be suitable for a building in which good acoustic properties must necessarily be of vital importance. He referred the question to his Commanding Engineer, and asked him whether he or any of his officers were well versed in the science of acoustics. The writer was himself acquainted with only the rudiments of the subject, and he felt somewhat doubtful how the case might stand with his brother officers. Putting, however, a bold face on the matter, he replied that there were nine Engineers at the station, and that he felt sure one of them would be found to have made that subject his special study. It was a somewhat rash statement, and he returned to his office with a mind but ill at ease. To his great relief, he learnt on inquiry that one of the number had been employed in the erection of the Royal Albert Hall, during which he had devoted himself to the most elaborate investigations on this particular point. The result was that the Governor was furnished with a report which proved of the utmost value in the determination of the designs for the new theatre.

It is this universality of application that has brought the Corps so prominently forward. If Lord Wolseley has by some been designated England's maid-of-all-work, the same title may with even greater justice be given to the Royal Engineers. The fol-

lowing extracts from an article which appeared in *The World* newspaper some ten years back, under the title of "Scientific Soldiers," is, although highly flattering, a fair *resumé* of what public opinion is on this point:—

. . . . "In their own line, as military Engineers, they can point to more than one enduring monument of their skill. The many public buildings and the magnificent defensive works which have grown under their hands, about our arsenals and dockyards and other decisive strategical points, are the best proof of it. The Ordnance Survey of the United Kingdom is, again, a colossal task, most efficiently and accurately performed. Nor have they been backward in giving judicious development to the many new and intricate processes which war has of late years summoned to its aid. They have adapted telegraphy to military purposes, have mastered electricity, and practical photography; experimented in aeronautics and with steam traction engines. They have codified a simple but comprehensive scheme of army signalling, have reduced bridging and pontooning to a science. They share with the Navy the momentous secrets of our torpedo defences; they have worked in amicable opposition to the sister service, devising the best means of resisting the terribly destructive missiles modern artillerists employ. Moreover, they occupy a foremost place in the broad theory of the military art, no less than in the practice of its abstruser details. They were among the first to realize, as indeed became them, how radical were the changes in progress in modern warfare. They have ever led the van, advocating reform in tactical manœuvres, formulating schemes of reorganization. In a word, they have been the ablest and most earnest exponents of the lessons taught by the most recent campaigns. . . . . .

"And in many walks of life, other than military, Engineers have been equally distinguished. They have proved themselves valuable public servants in very various capacities, and in a dozen different departments of the State. They have been pro-consuls of broad provinces. They administer the gaols, superintend the police, the railways, the art training of the nation. They are esteemed, and hold high places about the Court. . . . . They are to be found in Palestine, exploring the Holy City; on the Cape frontier; in the far West, settling disputed boundary lines; at the mouth of the Danube; on the Suez Canal; managing the Albert Hall; filling the Public Works Department of India; supervising the Asiatic telegraph system. They are, in truth, ready to go anywhere, and do anything, whenever they may be required. . . .

"In siege operations, in driving the flying sap, heading attacks, leading sorties, or holding out to the death, their examples have ever been conspicuous and gallant. In the field they are the first in every advance, the last in a retreat. They must reconnoitre, and make good communications for forward movements; they must blow up bridges, demolish roads, retard the enemy's pursuit, in movements that are retrograde. Brave, industrious, undeterred by danger or difficulty, the Royal Engineers have hitherto proved themselves good soldiers always, and they will certainly do so again."

This is high commendation, and would not find a worthy place in a work written by a member of the Corps were it not a simple quotation from an organ of public opinion.

It may not be uninteresting to supplement this with a short extract showing a French view of the same subject :—

"Les officiers du Génie anglais, tous recrutés parmi les élèves des écoles militaires, sont braves, instruits, estimés dans l'armée anglaise pour leur lumières et leur dévouement; ils sont aimés et respectés de leurs sous officiers et soldats, malgré l'abîme qui les sépare d'eux au point de vue de l'éducation, des mœurs, et des dispositions militaires. Appelés à servir leur patrie dans les vastes et lointaines possessions du globe, les officiers du Génie ont une existence d'ubiquité qui trempe leur caractère et nourrit leur intelligence par la variété des connaissances et par la grande expérience qu'ils y acquièrent."—(Heydt.)

That their widespread cultivation of civil scientific work has in no way been detrimental to the Corps in its military capacity needs scarcely be discussed. Year by year war is becoming more a question of science, and the man who is entrusted with the command of others needs himself to be not only an accomplished strategist and consummate tactician, but also sufficiently versed in scientific attainments to be able to utilize the resources which are by its means placed ready to his hand. Time was when officers of the scientific Corps were for that very reason considered incompetent to command armies. They were supposed to be so immersed in technical details as to be unable to take a broad view of war. This miserable delusion has now happily passed away; and the Napiers, the Hamleys, and the Grahams of the two scientific branches of the Army have won for their respective services a recognition that their special education is the best possible training for a general. Read what Lord Wolseley said on this point when speaking at a dinner given by the Institute of Civil Engineers :—

"In the Crimea there was not a single officer belonging either to the Artillery or Engineers, employed in command of a division or brigade. But how different was the case in the Egyptian expedition! On the Head-quarters Staff there were twenty-five combatant officers, and out of these twelve were either Engineers or Artillerymen. On my own personal staff, out of four aides-de-camp one was an Engineer and another an Artilleryman. The Chief of the Staff was Sir John Adye, who was second in command, and no general in the field was ever more ably and loyally seconded than I was by Sir John Adye. The brigade to which fell the brunt of all the fighting—the fighting brigade, as I might call it—was commanded by an Engineer, General Graham, a very old friend of mine, a man with the heart of a lion and the modesty of a young girl. In short, you would find that a large portion of the men

selected by His Royal Highness for high posts were chosen because they belong to the two corps to which I have referred."

Another view of the military Engineer, and a very genial one, is that taken by Col. Smythe, of the Royal Artillery, who in one of his essays, says:—

"The Corps of Royal Engineers comes in as a friend in need, and a guide to all arms in their exigencies; not a fourth arm, combining a distinct action of its own upon the enemy with that of other arms; but an element which should pervade them all, acting by and through them, and imparting to each according to occasion the spirit of skilled military ingenuity."

One more quotation to close this branch of the subject. It has sometimes been urged that much scientific study, or indeed any absorbing intellectual application, tends to the development of physical weakness. This idea has been well refuted by Sir George Trevelyan, who, in his life of Lord Macaulay, refers in the most flattering manner to the Corps of Royal Engineers as a marked proof of the fallacy of the notion. He says:—

"Macaulay did not vouchsafe more than a passing allusion to the theory that success in study is generally attended by physical weakness, and dearth of courage and animal spirits. As if a good place in an examination list was any worse test of a sound constitution than the possession of family or political interest . . . .

"The Royal Engineers—the select of the select, every one of whom, before he obtains his commission, has run the gauntlet of an almost endless series of intellectual contests—for years together could turn out the best football eleven in the kingdom, and within the last twelvemonth gained a success at cricket absolutely unprecedented in the annals of the game. The match in question was played on the 20th and 21st August, 1875, against an eleven of I Zingari; eight wickets of the Royal Engineers fell for an average of more than ninety runs a wicket, and this stupendous score was made against good bowling and excellent fielding."

Such are a few samples of public opinion on the Corps. It will be the writer's endeavour, in the following pages, to trace how this flattering estimation has, step by step, been won; and in the brief details given in the second volume of the career of the most eminent of its members, to afford some idea of the various and utterly dissimilar fields of labour in which the Engineers have worked.

CHAPTER II.

From the Norman Conquest to the Close of the Sixteenth Century.

The Dawn of Engineering Science—The King's Engineers from the Conquest—Sappers in the Scotch and Welsh Wars of Edward I.—The Attillator—Sir John Crabbe—The Siege of Calais in 1346—Subsequent Establishment of Engineers in Calais—Engineer Staff at the Tower in 1370—Siege of Harfleur and Battle of Agincourt—William Pawne—The Captain of the Pioneers—Coast Defences under Henry VIII.—Sir Richard Lee—John Rogers—Siege of Boulogne—Potinari—French Naval Attack in the Channel—Loss of the *Mary Rose*—John Brend—Thomas Pettyt—Fortifications of Berwick—Sir William Pelham—Siege of Leith—Defence of Havre—Leonard Digges—Disgrace of Pelham—Befriended by Leicester—His Campaign in the Low Countries, and Death—The Spanish Armada—Preparations for Defence—Expedition to Ireland.

There is some difficulty in determining at what point to commence a history of the Corps of Royal Engineers. On the one hand it seems advisable to trace to some extent the gradual rise of the science of military engineering as it became more and more a speciality, and eventually developed so much as to require a Corps devoted to its study and practice. On the other hand, to seek for the first germs of that science would take us back to the ages of primitive warfare. From the moment that man devised the means of providing himself with artificial protection to his person, and further created engines for the purpose of hurling destruction on his enemy, he became to that extent an Engineer.

As time went on he found that in addition to these primary wants there were others equally necessary, but more difficult of attainment, such as the formation of roads, the bridging of rivers, and the protection of the clusters of houses in which he and his neighbours dwelt. The provision of all these things demanded the exercise of inventive and constructive genius. Thus the science of the Engineer, rude indeed and inchoate, but still quite distinct from and superior to the mere fighting duties of the soldier, forced its way as a necessity of military life. It was long, however, before there was any attempt to sever the engineer training of the soldier from the other more normal branches of his occupation. In the armies of old every man was more or less an Engineer. He

constructed his own roads and bridges, he fortified his own camp, and further he prepared and worked his offensive engines of war—catapults, battering rams, and the like. All this he did in addition to the actual fighting which in later times was looked upon as the sole legitimate function of the infantry or cavalry soldier.

It is clearly unnecessary to go back so far as this in the world's history to trace the origin of the Corps. There remains, however, an intermediate epoch between the days when every soldier was an Engineer, and those when the Engineer was set apart from the rest of his comrades to be specially trained for his duties, and to become one of a body of experts who made it their profession to supply the scientific needs of an army, thus obviating the necessity of calling upon the ordinary soldier for any special skill or knowledge in the matter. In that intermediate stage certain men took up the study and practice of engineering as an adjunct to their ordinary military training, and when occasion called for such services they undertook the duties now devolving upon the Engineer. They considered this in the same light as that in which employment on the staff of the Army is now held, and having a special aptitude for the science were gladly offered temporary appointments.

Still, even in early days there were men who devoted themselves almost, if not altogether, exclusively to engineer work, and as far back as the Norman Conquest we trace the predecessors of the officer who is in the present day placed at the head of the Corps with the title of Inspector-General of Engineers.

In the Domesday Survey of A.D. 1086 "Waldivus Ingeniator" held nine manors direct from the Crown, in Lincolnshire. This was probably the Chief Engineer of William the Conqueror, the first of a long line of distinguished men who have graced that office. The entry is a proof of the monarch's liberality to one of his followers who had aided him in his conquest. William had indeed a warm respect for the art of the Engineer, and availed himself of it to the utmost. He established fortified posts throughout the kingdom as soon as possible after its subjugation. We also read, in the Saxon Chronicle, that when he invaded the country, he carried with him on board his ships a *castellum*, which he caused to be set up at the port of debarkation. The word *castellum* here used is the diminutive of *castrum*, the fortified camp. Probably it was something of the nature of a timber palisading, which was erected for the protection of his shipping, and to secure a point of re-embarkation in case of disaster.

In the roll of Battle Abbey appears the name of Richard Engaine as one of those who came over to England with Wil-

liam; and it has been held by some authorities that this name proves him to have been one of that monarch's Engineers, but there appears very slender evidence in support of the claim, certainly none as compared with Waldivus, who is distinctly called "Ingeniator."

Another Engineer of that time was Bishop Gundulf. We shall find, in tracing the ancestry of the Corps through the Middle Ages, that the ecclesiastics of the period were frequently employed in military engineering, not only in defensive operations, such as the construction of castles and other fortified posts, but also in their actual attack and defence. First amongst these stands Gundulf, whose name appears in 1078 as the designer and constructor of the White Tower in the Tower of London, which was begun in that year,—he having the year before been made Bishop of Rochester. From this time forward Gundulf through the remainder of his long life devoted himself, in addition to his priestly duties, to works of construction both lay and ecclesiastical. Amongst other edifices he built Rochester Castle, and also practically restored its cathedral, which had been allowed to fall almost into ruins. His fame as an Engineer, however, rests entirely on his two military works, the White Tower and Rochester Castle.

Between the reign of William I. and that of Henry II. there are no continuous records; but there does exist a single Pipe Roll of the Exchequer of the 31st year of Henry I., A.D. 1131, and in this document the Sheriff of London and Middlesex charges a sum of £10 12s. 9d., as having been paid to Geoffrey the Engineer. No doubt this was a worthy successor of "Waldivus Ingeniator," though probably, as nearly fifty years had elapsed between the two entries, one or more intermediate holders of the office had existed whose names have not been preserved. The above sum paid to Geoffrey appears by subsequent Pipe Rolls to have been an annual charge upon the county of Middlesex, for the care of the King's palaces and gaols. It was, in fact, the salary of the King's Engineer.

In the same record the Sheriff of Kent returns a sum of 2s. for Danegelt remitted to Geoffrey the Engineer. This tax was levied at the rate of 2s. per hide of land. We thus see that Geoffrey's estate consisted only of a single hide, but it shows that he was a tenant-in-capite of the Crown in that county, and the entry is of interest, as the immunity from the tax granted by the sovereign was in consideration of personal services to the Crown. Notwithstanding the favour thus shown to him, there is another entry by which we find that our Chief Engineer had been convicted of a poaching trespass on the King's forest, since the Sheriff of Kent returns a

sum of 73s. 4d. as owing by Geoffrey the Engineer in a plea respecting a stag "*pro placito cervi.*" The Chief Engineer had, in fact, illegally appropriated to himself a stag in Epping Forest, without warrant from the King. Of this fine he apparently had paid 40s., and is shown as owing the residue to the Exchequer.

The next name that can be traced is that of Ailnoth, in the Pipe Roll of A.D. 1158, in the reign of Henry II., where the Sheriff of London makes the following return:—"*Et in liberatione Ailnothi Ingeniatori qui custodit domos Regis* £10 12s. 9d. This entry recurs in all the Pipe Rolls of that reign, and also in the first year of Richard I.; but in the next year, A.D. 1190, the office of "Custos" of the King's Palace and Gaol was made hereditary, and the entries in the Pipe Rolls no longer serve to identify the King's Engineer. The King was at this time collecting money for his crusade from every quarter, and for this purpose sold many of the offices and franchises under the Crown. The purchaser in this case was Blunt de Longchamps, a relative of the all-powerful William de Longchamps, the King's Chancellor, who governed the country as Justiciary during the absence of the monarch on his crusade and subsequent imprisonment.

In the reign of King John and the early part of that of Henry III., the King's Chief Engineer was "Magister Albert." In the eighth year of King John, after the loss of Normandy, a writ on the Close Rolls orders the Sheriff of Lincolnshire to give to Magister Albert, the King's Engineer, land formerly belonging to the Normans, to the value of £12 a year. In the previous year a Close writ to the Custodian of the Bishopric of Winchester orders him to pay 75s. for robes for Magister Albert and his wife as a present from the King. In the 18th year of King John, a Close writ to the Treasurer of the King's Household orders him to give 100s. to Albert the Engineer, as a gift from the King. A similar writ to the Sheriff of Lincolnshire of 2 Henry III., A.D. 1218, directs him to give £10 out of the revenue of the county to Magister Albert, the King's Engineer, and five years later the Treasurer of the Household was ordered to give 20s. to Albert the Engineer to purchase a palfrey.

A list of Knight's fees in the Testa de Nevill enables us to identify the land given by King John to his Chief Engineer. Under the heading of Seveldon Hundred in Lincolnshire, it states that Magister Albertus Ingeniator held in Bekingham and Fentun, one fourth of a Knight's fee of the fief of Gilbert de Gaunt, which was of the King's Escheat, and the same Albertus held in Torp half a Knight's fee of the fief of Gilbert de Gaunt, the King's Escheat.

The Liberate Roll of 10 Henry III., A.D. 1226, shows a new

holder of the Engineer's office, as a writ on that Roll orders the Treasurer to pay four marks to Peter the Engineer, who was about to proceed to Corfe Castle to make engines for the King. It is not unlikely that Corfe Castle, from its proximity to the south coast, was the place of deposit for the King's military engines. The Testa de Nevill states that Peter Ingeniator held half a hide of land in Westerton, Co. Southampton, of the Abbot of Hide, rendering for it 15s. annually.

In the year 1255 we trace an Engineer of the name of Gerard, at Carlisle, to whom a reward was given by the King for "*Ingenia facta pro Rege apud Carlisl per Magist Gerard ingeniatorum suum.*" These were doubtless engines of war such as were in use at the time.

The records of the reign of Edward I. name several Engineers in the service of the King; but the only one to whom the prefix of "Magister" is given is one Magister Richard, who was therefore most probably the Chief Engineer and successor of Peter the Engineer. In the Pipe Roll of 15 Edward I. he is expressly styled "*Magister Ingeniatorum.*"

Several other names of Engineers appear who probably served under his orders. Thus we have Thomas de Saint Sepulchre, Engineer of the King's military engines, who received 7½d. per day for his wages. These seem to have fallen into arrear at the close of the reign of Henry III., and were paid up by Edward to the amount of £5 18s. 1½d. Also Ralph de Bewley, who was keeper of the works at the Tower of London. This worthy received £20 to provide necessaries for the works in progress at the Tower. The entry, which is in the Issues of Exchequer, shows also that Thomas of Saint Sepulchre was overseer of the said works.

When this monarch led in person an army into Scotland, his muster rolls show that there were on its strength 40 "*Cementarii*" "*Operarii*" and "*Minerarii.*" The cementarii were skilled workmen for building or repairing fortified places. The others handled pick and spade. Henry of Leicester was Magister of the *Cementarii*, and received pay at the rate of 6d. per diem. William of Bamburg was Corporal of the *Operarii* and *Minerarii*, receiving 4d. and his men 2d. per diem.

For the subjugation of Wales, Edward I. largely employed the art of the Engineer. At that time the country was almost impenetrable to a military force, owing to the dense woods and the almost utter absence of roads of any description. The King, therefore, in the Welsh war of 1282, ordered the sheriffs of the counties in proximity to Wales to supply between them 310 carpenters or woodcutters, and 1000 *fossatores* or sappers for road-making purposes. These men were to be assembled at Chester,

prepared to accompany the King into Wales (Welsh Roll, 10 Edward I).

Up to this time the English had almost always been beaten in their contests with the Welsh. The feudal levies whom the Kings had led for the purpose of endeavouring to subjugate the country, without any aid from scientific adjuncts, were quite unable to cope with the wild mountaineers, and could make no permanent impression on a hardy people, who retired into their fastnesses with all their belongings upon the approach of an enemy, and sallied forth again on his retreat.

Edward, however, was too great a master in the art of war to permit himself to be discomfited in this manner. He had intuitively grasped the principle which has in later times been accepted as an axiom of warfare in a mountainous country and against wild tribes, that the best strategical points are the plains from whence the sustenance of the people must be principally derived. He therefore marched his forces into the country, and driving the inhabitants to their inaccessible hills, occupied the fertile plains, where he was able to await at leisure the moment when starvation would compel his enemies to submit. These tactics were eminently successful, and eventually he became master of the country. The only disaster that attended his arms in this war was in carrying out an engineering operation. Many of the natives having taken refuge as a last resource in the Isle of Anglesea, Edward followed them with the intention of completing his conquest. His Engineers constructed a bridge of boats over the Menai Straits, but the King was so impatient to advance, that he passed a portion of his troops over before the bridge was completed, taking advantage of low tide, which enabled them to wade over the intervening space of water. The rising tide isolated this detachment, which was destroyed by the islanders before Edward could render them the slightest assistance.

In the war of A.D. 1287, King Edward employed a still larger number of artificers. The Sheriffs of Salop and Stafford were ordered to select from their counties alone 2,000 woodcutters and sappers (*fossatores*), for service in Wales. This war was signalized by the crushing to death of two barons and many knights and esquires, under the walls of the castle of Drosselan, which were being undermined by the Engineers and fell prematurely. The Pipe Roll of 15 Edward I., A.D. 1287, contains the following notices of payments to Magister Richard:—"*Ingeniatorem ad Ingenia Regis*" on account of this siege. For an engine bought by him for Droscelan, £109s. 12d. For a large anchor 40s., for the carriages of quarrels 15s. 7d., and several other sums for the purchase of steel, nails, leather, cord, ropes, &c., used at the same place.

In the wardrobe account of the 28th year of the King (1299-30), the name of Magister Reginaldus appears as Engineer at Berwick. His pay was 6d. per diem. In the month of December, 1299, he visited Newcastle-upon-Tyne, to obtain permission from the Sheriff of Northumberland to cut timber for the manufacture of the King's siege engines, for service in Berwick Castle. For the expenses of this journey he received £2 8s. Reginald was left at Berwick, whilst the King was absent on active service with his army, to direct the engineering operations should the Scots take that opportunity of attacking the fortress.

Thomas of Bamburgh, a monk of Durham, was also employed at this time in Berwick on engineering duties. He designed and superintended the construction of two large engines, for the protection of the place, for which the King paid him £3 6s. 8d.*

When the King entered Scotland, in 1300, he took with him several Engineers, mostly monks, to conduct the working of his military engines, and to make such restorations in the captured fortresses as should place them in an efficient state of defence. Foremost among these was Brother Robert de Ulmo, who seems to have acted as the King's Chief Engineer throughout the campaign. To him was entrusted the engineering operations at the reduction of the forts of Jedburgh, Dumfries, and Roxburgh, and also at the siege and capture of Carlaverock Castle. Under him were Brother Thomas of Bamburgh, before mentioned, and Gerard of Mayak. Other monks are also referred to, but their names are not given.

In this year we find, for the first time, a new name given to the official to whom was entrusted the repair of permanent works, and also the working of the engines of war—in fact, the duties which have hitherto been shown as falling to the lot of the Ingeniator. The title referred to is that of Attillator. Topham and Grose are both of opinion that the name is synonymous with that of Engineer. There can be no doubt that from it was derived the term Artillery.

The repairs to the stronghold of Dumfries had originally been entrusted to Gerard de Mayak, but the King, desirous of having the work well and expeditiously carried out, augmented largely the number of artificers employed, and placed Robert de Ulmo in charge of the work. To get a sufficiency of timber Ulmo had cut wood in the neighbouring forest of Inglewood, where he set up his tent and superintended the felling of the necessary trees. Whilst thus engaged both the King and the Queen paid him separate

* All these entries are from the "Liber Cotidianus Garderobe Ed. I.," published in 1786 by the Society of Antiquarians.

visits, the former on the 17th, and the latter on September 27th. They were so pleased at what they saw that they each made him a present of £2. Later on the King gave him a further sum of £1 3s. 4d., in addition to his pay, as a token of his satisfaction at the manner in which he had restored the defences of Dumfries.

The conquests of Edward in Scotland were but shortlived. In 1318 not only had they all been recovered by the Scots, but the border fortress of Berwick had also been lost. In 1319 Edward II. endeavoured to retake the place. The only matter of interest, from an engineer point of view, lies in the fact that the defence was conducted by Sir John Crabbe, a celebrated Flemish Engineer, referred to by Sir Walter Scott in his "Fair Maid of Perth," where Simon the Glover, speaking of a wine cup, says, "My father had it in a gift from stout old Crabbe, the Flemish Engineer."

In this reign John de Norton appears as "Supervisor" or Surveyor of the King's Works, but whether as a military Engineer or a civilian does not appear. Later on, in Edward III.'s time, we find Magister Walter de Weston "*Clericus operationum Regis.*" Payments were made to him for works at Windsor and at the Tower of London. And as he appears in the French Rolls as serving in the King's suite in France, we may assume that he was a military Engineer, in which case his title of Magister leads to the supposition that he may be placed on the roll of Chief Engineers.

In 1332 we again find the title of Attillator appearing, and as the King's Warrant for his employment seems clearly to define his position, it is here given so far as it refers to him:—

"Quia datum est nobis intelligi quôd in Domibus nostris pro officio Attiliatoris deputalis in diversis Castris nostris per defectus hujusmodi in immensum deteriorantur in nostri Dampnum & Jacturam Nos volentes Defectus hujusmodi reparatione & emendatione quibus indigent modo debito reparari & emendari vobis Mandamus quod Defectus illos per nos & alios supervidêre & reparatione & emendatione quibus necessario indigent reparari & emendari per Visum & Testimonium alicujus Fidelis nostri partium illarum facientes & Custos quos circa prœmissa fieri faceritis cum illos scriverimus vobis in Compoto vestro prout justum fuerit allocari faciemus."—(Rymer's "Fœdera," 1323-1338.)

Edward III. was duly impressed with the wisdom of employing trained artificers with his armies. In his expedition into France, in 1346, he collected experienced miners from the Forest of Dean, and ordered Andrew, the Smith of the Tower, to select smiths and other artificers for him in the City of London, to be ready to embark with him from Portsmouth (French Roll, 20 Edward III.).

Amongst the Dodsworth MSS. in the Bodleian Library, there is the Treasurer's account of wages paid for the King's army before Calais, in 1346. The total strength of the besieging force was 31,294, of which 314 were Engineers, Gunners, and other artificers. The entry is as follows:—"*Cementarii Carpentarii Fabri Ingeniatores Pavilonarii Minarii Armatores Gunnatores et Artillarii* 314 *aliqui ad* 12*d.* 10*d.* 6*d. et* 3*d. per diem.*" This document contains the first authentic record of the employment of Engineers and artillery at a siege. It also corroborates the statement of Villani that Edward had cannon at Crecy.

After the capture of Calais, Edward seems to have maintained a Corps of Engineers, and his principal engines at that place. His Chief Engineer was John Gruynard. On the French Roll of 1354 there is a writ by which the King, for the good service performed by his Sergeant-at-arms, John Gruynard, the superintendent of his engines and springalds, at Calais, grants him an annual pension of 100s. for his life. He is styled in this writ:—"*Supervisor operationum ingeniorum et springaldorum nostrorum in villâ nostrâ, Calesie.*" In the following year a writ on the same Rolls directs all sheriffs of counties to give facilities to John Gruynard—"*Magistrum ingeniorum nostrorum in villâ nostrâ Calesie*"—to select carpenters for Engineers' work, and carriages and harness for the King's engines. John Gruynard was evidently not an Englishman. He was probably a native of Brabant. Edward had married Philippa of Hainault, and had many of her countrymen in his service, His cannon were mostly made in the Low Countries, for the Brabanters were even then famous for their working in iron and steel.

From several entries in the Issue Roll for 1370, it is clear that Edward had at that time a staff of Engineers in his service whose head-quarters were in the Tower of London. John de Sleford, Clerk of His Majesty's Wardrobe, received in that year two sums of £40, and £13 6s. 8d., on account of the King's Engineers. They must have been a most important body, as John Stanpyt was appointed clerk to attend to their office business. William Byker is the only one whose name is given.

In the following reign, Arnold Brocas was *Clericus Operationum Regis*, the King's Clerk of the Works, but whether he was a military Engineer does not appear.

The next name of note as an Engineer is that of Nicholas Merbury. In Rymer's "Fœd." ix. 160, he appears as master of the King's works, guns, and ordnance. He was present at the battle of Homildon, in Northumberland, fought between the English and Scots, and was selected by the Earl of Northumber-

land to convey the tidings of his victory to the King, for which Henry IV. awarded him a pension of £40 a year for life. In the succeeding reign, Merbury did good work. When Henry had decided on the invasion of France, one of his first steps was, on September 16th, 1414, to order Nicholas Merbury, master of the King's works, guns, and ordnance, and John Louth, his clerk, to provide smiths and workmen for the expedition, and to arrange for their transport to the point of rendezvous (Rymer's "Fœd." ix. 160).

The first operation of the war was the siege and capture of Harfleur. This fortress, situated at the mouth of the Seine, was enclosed by a strong wall with three gates, each covered with a circular barbican. The whole was surrounded with wet ditches of deep running water. Obstacles in the form of abattis had been constructed, and the stream which passed through the town was dammed, and had produced a large inundation between the walls and the besiegers' camp. Henry appeared before the place on August 17th, 1415. There is some little difficulty in deciding the question of who was his Chief Engineer. Nicholas Merbury was undoubtedly there, but the name also occurs of Master Giles in such a manner as to show that if he were really present, he occupied the leading post.

The evidence in favour of that view is to be found in three entries in the "Priest Chronicle," which read as though Magister Ægidius was present, but which, according to Sharon Turner, might only refer to the principles laid down by our Ægidius Romanus in his "Regimine Principum," or how cities should be governed in times of war. This work was written a hundred years before the siege of Harfleur. The point is sufficiently curious to make it worth while to quote the passages :—

1. "This town is but small but very fairly fortified and surrounded with walls embattled, and therefore according to Master Giles very difficult to be attacked and very easily to be defended."

2. "Whilst these things were going, the King was to have made an attack by means of mines . . . but this work which was begun contrary to the opinion of Master Giles" &c.

3. "And amongst the various anxieties a siege was very perilous on that side, account of the difficulty of communication between the King and the Duke of Clarence. The same duke, according to the advice of Master Giles and by order of the King" &c.

It seems natural to read these references as implying Giles to have been present; and, if so, giving such advice as should only have been offered by the Chief Engineer. Strangely, however, his name nowhere appears in the list of Engineers, and their

subordinates as given in the Sloane MS. 6,000, quoted in Nicholas's "Agincourt." That list stands as follows:—

Nicholas Merbury, Esq., with 21 foot archers.

Thomas Matthew, and William Temple, Master Carpenters, with 124 Carpenters.

Sir John Greyndor or Greyndon, knight, with 120 miners.

John Bennet, Master Mason, with 120 labourers.

Richard Hodel, and Thomas Smith, with 12 yeomen smiths.

There were two land attacks, one commanded by the King in person; the other, which was on the far side of a small river, under the Duke of Clarence. The fleet bombarded the sea face, and armed boats from the ships pushed up the river and battered that part of the works which became exposed to their fire. Meanwhile, the land forces brought forward their engines of war and guns, attacking the town on all sides. We read of the guns which

"by the force of ignited powders blew forth stones of monstrous size, which threw down the walls with a frightful noise."—(Labourcur's "Histoire de Charles VI.," 1003).

Breastworks, made strong with layers of fascines, were constructed to afford cover to the gunners and Engineers, and similar cover was made for a party of miners who were endeavouring to drive mines towards the place. Through these mines, which were intended to be so many subterranean passages, the King hoped to pass his troops into the place. This was the point on which, as before referred to, Master Giles is supposed to have given a contrary opinion. If so he was proved to be right, for the enemy countermined with such effect that they broke into the besiegers' galleries, and a most determined underground conflict took place without any further progress being possible.

Meanwhile, the general bombardment was kept up with ceaseless energy by the fleet as well as on land. The barbican covering the gate that was being attacked by the King soon exhibited signs of its effects, and was to a great extent demolished, whilst gaping breaches appeared in the walls. In all this stress the garrison showed the most undaunted firmness. They repaired the breaches and the crumbling barbican with fascines and faggots, mud and scrub; they barricaded the streets, and blocked up other openings with earthen traverses; they collected on the ramparts a quantity of pots filled with lime, sulphur, and boiling oil,—apparently a species of Greek fire; and in various other ways prepared to resist to the death in case the besiegers should attempt to deliver an assault. This was precisely what the King, after the failure of his mining operations, was intending to do. Fascines ten feet long were constructed to throw into the ditches, whilst towers and wooden

structures, equal in height to the walls, were brought forward for use at the proper moment.

For a whole month the siege had been carried on with the utmost fury, and the King only refrained from delivering his assault because he hoped to induce a surrender without the sacrifice of life which must have resulted from such a measure. The garrison, however, still held out bravely. On one occasion they made a sortie from the barbican, in which they succeeded in destroying much of the King's trench work before they were repelled. Stimulated by this they, on the following day, made a second attempt, but without the same good fortune, for the English, in driving them back, captured the barbican. This led to a parley, and on September 22nd the place was surrendered.

Having succeeded in securing Harfleur, Henry proposed to return to England for the winter, marching through Normandy, and intending to embark at Calais. It was whilst making this movement that the battle of Agincourt was fought. He left behind him a garrison to hold the newly-acquired fortress. Alexander Sheffe is mentioned as overseer of the works, to whom was deputed the restoration of the fortifications. His name does not appear in the records of the siege, but it seems most probable that he must have been present at it. John Longhaw, one of Merbury's retinue, was also left behind, he being too ill to accompany the army to Calais.

Merbury is mentioned for his gallantry at Agincourt in having captured with his own hand two of the enemy's men of note, whose ransom he was entitled to receive.

Hitherto the Engineers had had no special organization as a distinct body. The name, in fact, had become all but obsolete, that of Attillator having to a great extent superseded it; but under whatever title they did service, no rules have been discovered by which the officers who did Engineers' duty with the king's forces were to be governed. Even the Ordnance Service, which since the introduction of gunpowder had been gradually growing in importance, and of which Merbury was at this time the chief, had no special regulations for its conduct. The Army had its distinct orders as far back as the year 1386, in the reign of Richard II. These statutes had been reproduced by Henry V. in 1414, and by them it had been governed in its war with France. We find in them, however, no allusion to the Ordnance.

The Earl of Shrewsbury, in his regulations for the force engaged in the sieges of Maine and other places, gives the following instructions, which are interesting from an Engineer point of view, as they show how the materials for a siege, such as were to be made on the spot, should be provided:—

"Stakes for a battle or march."

"Every captain is to compel his yeomen every man in all haste to make a good substantial stake of eleven foot long on pain of being punished.

"Faggots at sieges for bulwarks and ditches.

"Every man is to make a good substantial faggot of thirteen foot long without leaves, against the day next coming, upon pain of losing a month's wages. Merchants coming into the market are to make the faggot like the soldiers, and every captain is to lay his faggots apart, to the intent that it may be seen whether he has his number of faggots according to the strength of his company which he leads.

"Ladders.

"Every seven gentlemen or men-at-arms is to make a good and sufficient ladder, and a strong, of fifteen rongs which is to be ready betwixt this and the —— day, on pain of being chastised at my lord's will.

"Paviss (a mantlet or hurdle)

"Every two yeomen is to make a good pavise of boards in the best manner they can devise, that one may hold it while the other shoots."—(Nicolas's "Agincourt." App. VIII.)

There are a few other records of Engineers in this reign. Robert Rodington appears as employed in the fortification of Portsmouth, where he built a tower for the protection of the Navy and the defence of the town. The sum of £50 was paid to Richard de Coventry for this Engineer's use in the year 1417 (Exch. Issues). Gerard Spronge, Armiger, was another name which appears in the same year in the Liberate Roll, where the Treasurer is ordered to pay him £76 14s., in part payment of £470 7s. 5d. which had been expended by him in making cannon and their carriages and for the conveyance of Arblasters.

We look in vain for the names of Engineers during the next fifty years. That there must have been many during the Wars of the Roses is unquestionable, and doubtless some won distinction; but, if so, they have left no trace behind them, for the next name of an indubitable Engineer that we meet with is that of William Paon, commonly written as Pawne, who was a man of considerable repute. He commenced his military career towards the close of the reign of Edward IV., and continued it till late on in that of Henry VIII., with whom he was a very favoured personage. He was with Henry VII. at his landing at Milford, and at the battle of Bosworth in 1485. For these services he was well rewarded, as Henry VII. gave him several lucrative posts about the Court and Royal Household. It was not, however, until the reign of his successor that Pawne was employed as an Engineer, or at least that there is any record of such employment. We find him, however, in 1509, in the first year of Henry VIII.'s reign, appointed sur-

veyor of the works at Berwick, then the key of the north and a fortress of considerable importance. On June 23rd he received under a Royal Warrant £100 for materials bought and sent for fortifying the town, and on July 1st a further sum, for the same purpose (Household Exp. 1 Henry VIII.). Pawne continued at Berwick till 1513, when he accompanied Henry in his French expedition. He was placed in charge of the ordnance, as is shown by the issues made to him under Royal Warrants by Sir Sampson Norton, and he received the appointment of Master Trenchmaster. In this capacity he conducted the engineering operations of the siege of Terouenne, until he was called away to join the expedition against the Scots. In this he held the rank of Master of the Ordnance, with pay at the rate of 6s. 8d. per diem. He was present at the battle of Flodden, at which he captured the Scotch artillery and conveyed it to Berwick. There he remained for the next two years. In 1515 he was once more recalled to France, and placed in charge of the engineering works to be carried on at Tournay, recently captured from the French. At this place he was directed to construct a citadel, and enclose it with fortifications. Whilst thus engaged Pawne seems to have had some disagreement with the authorities of the town, and made many grievous complaints to Cardinal Wolsey of the manner in which his work was impeded by them. They, on their side, accused him of peculation, and much angry correspondence and recrimination ensued. Henry, who throughout supported his Engineer, wrote personally to him, urging expedition in the prosecution of the work. So also did Wolsey, who complained that he was not kept sufficiently informed. In reply to the latter Pawne enumerated the stores he had collected, viz., 24,000 quarters of lime, 60,000 feet of hewn stone, 8,000 feet of rough stone for filling, 700 tons of timber, and 2,000 loads of sand. His letter was short, "not daring to be tedious remembering your Eminence's manifold services. I am not fumous as report has been made. My fumes never hurt any man so much as myself." The quarrel between him and the commissioners of the town, at whose head was Lord Mountjoy, ended in the latter being removed, and the work vested entirely in Pawne's hands. On September 16th, 1516, he received £2,200, and on November 20th, £1,000, for the prosecution of the fortifications. During all the time that the Tournay works continued he was also in supreme control of those carried on at Berwick, and was constantly passing from the one place to the other. As time went on he rose more and more in the good graces of the King, who was never tired of heaping fresh lucrative posts on him.

The following enumeration of his various offices may not be

without interest. He was Clerk of the Royal Stables and Clerk to the Marshal, Clerk of the Aviary, and Avener of the Household, these four being offices at Court. He was at the same time High Bailiff of Guisnes and Collector of the quit rents at Calais, Gauger of the City of London, and Ranger of Melthuyt Forest in Wilts. He was Collector of the Dismes at York, Receiver of the Possessions for Berwick, and Master of the Ordnance there. Also Receiver-General of certain lordships and castles, for payment of its garrison; and lastly, he was Engineer of the Fortifications and Commissioner at Tournay. His position at the latter place gave him great responsibility, and for four years he continued to expend large sums in carrying out the project sanctioned by the King. At the end of that time the fortress was restored to the French, and the work was stopped; the munitions of war and the building materials then on hand were sold to the French at a great sacrifice, and Pawne's connection with the place ceased. From this time he drops out of sight in the records, the last trace of him being a letter he wrote to Wolsey, dated December 7th, 1518.

From this time we begin to find the Engineers identified with the field operations of an army, as distinct from works of construction, and the title itself changing in accordance with the division of duties. The original term Engineer seems to have been considered hardly sufficiently martial to represent their military duties. The new term was that of Trenchmaster or Captain of the Pioneers, and the officer at the head of that branch of the service was called Master Trenchmaster. There was, however, no special organization or corps of Trenchmasters. Officers having the necessary qualifications were appointed to the duty by selection from the Army for a particular service, and ceased to be so employed when the expedition was disbanded. Engineers entrusted, on the other hand, with the erection of permanent works, were called Surveyors of the King's Works, or sometimes Master Masons.

The duties of the Captain of the Pioneers, in camp or in the field, as laid down in 1518, were as follows:—

"The office of the Captain of Pioneers is, after he has obtained knowledge of the Lord Lieutenant of the number of persons he is to have under his charge, to inspect them and see that they are able and strong men to endure any labour. He must appoint certain captains under him to have the leading and government of them, who must be ready at all times to bring the pioneers to work where they shall be appointed, and then to tarry with them to see that they work accordingly.

"For every 100 pioneers he must have one clerk, who must every morning call them by their names to see whether he wants any of his

number or no, and if he want any to make good enquiry whether they who are absent are sick, dead, or run away, and as he finds the truth, so to make report to the chief captain. He must appoint certain victuallers to provide victuals for them and to bring it to them where they work, at such hours as are appointed them to take their rest in. These victuallers must also receive victuals to be brought to them, when they do not work at such place as may be ordered, in order that these victuallers may be kept together to be ready at command.

"The Captain of the Pioneers ought to go with the Marshal when he goes to view the ground where the camp is to be pitched, in order that he may see whether the way to it is easy and good for the great artillery and other carriages to pass or no; and should he perceive that the way is not good he must cause the pioneers to mend it by the time the artillery and carriages come to it, so that they may have ready passage without any stoppage. He must also attend upon the High Marshal to know whether the camp is to be entrenched about or not, and at all times he and his pioneers must be at the command of the High Marshal both day and night, to do such things as he shall think most convenient to command them."—(Grose's "Mil. Antiq.")

Of the pioneers, little is known before the reign of Henry VIII. In earlier times, strong, able-bodied men were demanded from the sheriffs, who had to supply the number wanted either by voluntary service or impressment. This system was gradually changed, and the necessary workmen taken from the ranks of the Army. By the time we have now reached, viz., the early part of the sixteenth century, they formed a separate corps, expressly for work in camp or field, and remained organized as pioneers, and nothing else, throughout the campaign.

The reign of Henry VIII. was a very prosperous time for the Engineers. That monarch made great and constant use of them for the numerous fortifications he was perpetually raising, and the demand so far exceeded the supply that we find many foreigners, principally Italians, coming over to England to obtain employment. In the year 1537, the King, who dreaded an invasion, and was uneasy at the defenceless state of the coasts, called for projects for their better protection, and for the next three years, a large outlay was incurred in carrying out the works that had been approved.

Blockhouses and batteries were thrown up at St. Michael's Mount, Falmouth, Fowey, Plymouth, Dartmouth, Torbay, Portland, Calshot, Cowes, and Portsmouth. Castles were reared at Deal, Sandwich, Walmer, Sandown, and other places; whilst defensive works were also carried out for the protection of the Thames, particularly at Gravesend, Tilbury, and Milton. The fortresses near the Scottish border were strengthened, especially at Hull, Scarborough, Norham, Newcastle, and Berwick. In the French

district, Guisnes and Calais were improved. Indeed, these fortresses seem to have been in a continual state of development. Froude, in his history of this period, throws a slur upon the state of the military engineering science of England :—

"It is a mortifying proof of the backwardness of the English in engineering skill, that the King, for the works at Dover, sent for Engineers to Spain."

A careful study of the records of the time shows that he had several high class English Engineers always hard at work in his service, but at this crisis the demand was so large that they had to be supplemented by foreigners, not only Spaniards but of other nationalities as well. At the same time it must be admitted that the science of fortification was more thoroughly studied abroad, where it was so much more necessary than in England.

Of the English Engineers who at this time came to the front may be mentioned John Rogers, Richard Lee, Patie Grayme, William Burgate, and William Reyerne; of these the most important were Lee and Rogers. Richard Lee commenced his career as a simple spearman at Calais, where he devoted his leisure to the study of military engineering and architecture, and before long became celebrated as a civil and military architect, chiefly excelling in Gothic. Lee's first employment as an Engineer was in carrying out the works at Gravesend and Milton, in which he gave such satisfaction to Henry that on their completion in 1540 he was appointed the Chief Engineer at Calais. His previous residence there had made him acquainted with all its weak points, and in his new position he set to work vigorously to remedy them. Among the Cott. MS. is a letter written from Calais by Lee to Lord Cromwell on September 26th, 1540, in which he specifies the principal works he is carrying out. By this we see that he was enclosing the town with a line of fortifications from the Boulogne Gate to Kirkby's Tower. The tower itself was well advanced, and the arches between Boulogne Gate and the Hermitage House were finished. He also refers to work he was doing at Guisnes, where he says his designs have been very successful.

In 1543 he was recalled from Calais to act as Chief Engineer in the expedition to Scotland under the Earl of Hertford. On May 4th he landed at Leith, and that town was speedily captured, sacked, and burnt. On the following day Edinburgh met with the same fate. As a military exploit these ruthless barbarities are not worthy of record, but they are interesting from the fact that Lee carried off, as part of his booty, a brass font from the chapel of Holyrood Palace. This font had been reserved exclusively for the baptism of royal infants from very early times, and was a relic of considerable value. On his return to England he

presented it to the Abbey of St. Albans, where it was preserved until the rebellion of the Puritans. In one of their ravaging expeditions St. Albans was visited, and the font carried off. Since that time it has been lost sight of. At some period after Lee had presented it to the Abbey a Latin inscription was placed on it, of which the following is a translation :—

"When Leith, a town of good account in Scotland, and Edinburgh, the principal city of that nation, were on fire, Sir Richard Lea Kt. saved me out of the flames, and brought me to England. In gratitude to him for his kindness I, who heretofore served only at the baptism of the children of kings, do now most willingly offer the same service even to the meanest of the English nation. Lea the conqueror hath so commanded. Farewell A.D. 1543 in the 36th year of King Henry VIII." *

When Weever published his Funeral Monuments in 1631 the font was still at the Abbey of St. Albans, and he says that the inscription had only a short time previously been "Englished."

After the siege and capture of Boulogne, at which Lee was the Chief Engineer, he, with several other officers, was knighted. Sir Richard was the original of the picture described by Sir Walter Scott, in Woodstock, as that of "Sir Victor Lee." The picture itself was imaginary, but it gives a very good idea of the man :—

"It was that of a man of about fifty years of age, in complete plate armour in the harsh and dry manner of Holbein . . . The face of the knight was, from fading of the colours, pale and dim . . . yet the lines expressed forcibly pride and exultation. He pointed with his leading staff or truncheon to the background where . . . were depicted the remains of a burning church or monastery, and four or five soldiers in red cassocks, bearing away in triumph what seemed a brazen font or laver. Above their heads might be traced in scroll LEE VICTOR SIC VOLUIT.* "

That Sir Walter Scott meant this portrait for Sir Richard is clear from the words which he puts into the mouth of Colonel Everard, whilst soliloquizing in Sir Victor Lee's chamber :—

"What though old Victor Lee was a sacrilegious man, as common report goes, and brewed ale in the font which he brought from the ancient palace of Holyrood, while church and building were in flames. . . ."

Some years earlier Henry had given Lee the suppressed nunnery of Sopwell, in Hertfordshire. Lee pulled down the building, and on its site erected a handsome house, which he called Lee's Place (Walpole's "Anecdotes of Painting)."

John Rogers was the other Engineer of those employed by Henry VIII., who made his mark in that service. He was originally a clerk under the Master of the Ordnance, and per-

* These words are taken from the inscription on the font.

ceiving the opening which a knowledge of military engineering and architecture would afford him, had studied those sciences with much application. The result was that in 1537 Henry appointed him surveyor of the new works then being erected at Hull. We next trace him at the siege of Boulogne, where he served under Lee. In this campaign, besides his duties as an Engineer, he was Comptroller of the Train, with pay at the rate of 10s. a day—a large allowance for those times. His Train consisted of 1 Master Gunner, 1 Conductor of Ordnance, 1 Clerk, 71 Gunners, 4 Carpenters, 4 Wheelers, 3 men "to clean ye king's weapons," 11 Archers, and 2 Overseers of the Carters, "because they speak the language."

At the head of the Engineers at the siege was Sir John Harrington, but he does not seem to have been a professed Engineer. The following additional names also occur:—William Burgate, who had succeeded Lee as surveyor at Calais; William Reyerne, Captain of the Pioneers and Trenchmaster; Potinari, an Italian, who had served as an Engineer in England since 1525; and Jerome de Trevisi, another Italian, who had taken service under Henry in 1537. He was a painter and an architect, as well as a military engineer.

The siege of Boulogne began on July 19th, 1544, and on August 3rd the first battery was opened to breach the eastern side of the town under charge of Rogers. This battery soon created havoc in the town, and on August 19th the steeple of the church fell from its effects. Potinari had charge of the mines, and pushed forward his galleries from a Bray which had been captured on September 1st. Reyerne, with his pioneers, assisted at this work, and we find a record that Henry afterwards reimbursed him for timber which he had purchased, as well as for "160 lbs. of white lights at 3d. per lb." Potinari's first mine was fired on September 4th, under the tower, at the south side of the town, which was much shattered by the explosion. Henry, in a letter to the queen, dated September 8th, alludes to this mine as having done good execution in tearing one of their greatest bulwarks. (Rymer's "Fœd." xv. 51.)

By September 8th three other batteries were ready, and three other mines were being pushed forward. On the 11th Potinari announced that he was ready to destroy the castle. The King, with the Earl of Surrey and Lord William Howard, was present on the occasion, and at a given signal the mines were fired. The result proved completely successful—the citadel was laid in ruins, and many of the defenders were killed and wounded. The troops who were held in readiness at once stormed the place, and established themselves in various points. On the

14th the defence was abandoned, and the fortress surrendered. The Engineers distinguished themselves greatly throughout; Jerome de Trevisi was killed, and Burgate so severely wounded that he was reported dead. We do not hear much of Lee's doings, but the fact, as already stated, of his having received the honour of knighthood (not so commonly conferred in those days as now) proves that he must have distinguished himself. Not content with bestowing this honour on him, Henry also granted him, by patent of October 4th of the same year, a new coat of arms, "Per chevron or and gules in chief two lions combatant sable armed and langued gules."

When the army left, Rogers was appointed Engineer to the captured town; when he had recovered from his wound Burgate resumed his duties at Calais. Lee, who had returned to England with the King, was ordered back to France, to superintend the new works in progress at Guisnes; whilst Potinari was made surveyor in the south-west of England, including the Isle of Wight. Henry, however, soon became uneasy at the state in which Boulogne had been left, and he considered a grand scheme of fortification was required to secure the town. He therefore called Lee, Rogers, and Burgate to him, and a scheme of defence of the most modern type of fortification was drawn out and ordered to be at once begun under the immediate charge of Rogers. Lee was appointed Chief Engineer over the three towns of Boulogne, Calais, and Guisnes. The King was urgent that the most rapid progress should be made, and a sum of £16,000 was granted to Rogers to defray the first expenses; stores and materials were shipped from England, and by the King's orders Lee despatched 300 pioneers from Calais to aid in the work.

A powerful work had during this time been constructed at Portsmouth. Sir Anthony Knyvett was then governor at this station, and from a letter he wrote to Henry on October 22nd, 1544, we get some particulars about it. Unfortunately, the Engineer in charge was ill.

"Your Majesties Surveyor at your Highnes towne of Portesmouth hath been very seke, the space of twoo moneyths and yet is not hable to comme forthe of his chamber. . . I hath been the oversear of your Majestyes workes here, and for the tyme that I have been oversear here your Majesties wishes hath not been hyndered."

According to Sir Anthony, the work was a castle in compass, accommodation, strength, and beauty, strange in design and form, finely situated for defence, and marvellously praised by all who had seen it. Such another fortress was not within the realm. It was a model of its kind, and he ventured to think that his Majesty

had never seen so great and substantial a work executed in so short a time. An interview with the King was asked for to show him "the platt of it and the doings thereof." We can, however, find no trace of who the Engineer was to whom Henry was indebted for this addition to the defences of his kingdom.

In 1545 the French fleet attacked the south coast of England, at Portsmouth and the Isle of Wight. Nothing of any importance was effected beyond the plunder and destruction of a few villages. The incident is, however, interesting because it was whilst the British fleet under Admiral Dudley was manœuvring against the enemy, that the *Mary Rose*, which had been much injured by their shot, foundered in the act of tacking, under the eyes of Henry, who in person was watching the proceedings, in company with Sir Richard Lee. Her captain, Sir George Carew, and the whole crew of 400 men, perished. The *Mary Rose* lay at the bottom of the sea off Spithead until the year 1843, when Colonel Pasley, R.E., having succeeded in removing the wreck of the *Royal George*, destroyed the remains of the *Mary Rose* also, after it had lain submerged for nearly three hundred years.

In 1546, negotiations for peace were carried on between England and France, and after great disputation, arising from the difficulty of delineating the proposed boundary of the English possessions in France, were finally brought to a successful conclusion. During all these discussions Lee and Rogers were much engaged. The question which most puzzled the negotiators was the position of the river Lianne near its source, there being several small streams which united to form that river, and the difficulty was to decide which of them was the true line. The matter seemed insignificant and, as Rogers in his blunt way described it, "not worth three halfpence;" still, neither Henry nor the French would give way, and the Engineers were sore put to it to settle the boundary. It was at last entrusted to a commission of four persons, two French and two English, to determine. Rogers was one of the two English commissioners, and he was employed to plan the boundary when agreed to, "whereby," as the King said, "we may the more certainly see what portion of ground is appointed to remain with us accordingly" (Lemon's "State Papers").

After the death of Henry, Hertford, the Lord Protector to Edward VI., decided on an expedition against the Scots, and assembled an army at Newcastle. Sir Richard Lee was withdrawn from Guisnes to accompany him, with the rank of "devisor of the fortifications about to be made" ("Fragments of Scottish History"). The Captain of the corps of Pioneers was John Brend, who was Trenchmaster under Lee. He had been employed in

1545 as Engineer at Tynemouth, and after that service was completed was sent as a commissary to Flanders. In a letter to Henry, from Bremen, on March 4th, 1546, Brend wrote—

"A few days now past died Martin Luther, which thing though it be not of much moment yet by reason of the great fame that goeth of it in this country we could do no less than inform you" (Lemon's "State Papers").

The Scotch campaign was unimportant, and consisted principally in devastating the country and demolishing strong places. Patten, in his history of the expedition, says—

"Lee's charge was specially to appoint the pioneers to work anywhere he should think meet, and then, when his Grace assigned, to devise the form of building or fortification to correspond with the nature and extent of the defence required, in which the goodness of his wit and his great experience had made him in the science of war and military construction right excellent."

For his services in the campaign Lee was granted by Edward VI. the manor of the Alien Priory at Newenton, in Gloucestershire. (Patten.)

Another Engineer who came into notice in this war was Thomas Pettyt,* who two years before had been employed at Calais. A plan drawn by him at that time of the country around the place is now in the British Museum. In April, 1548, Lord Grey, with a strong force, had pushed forward into the vicinity of Edinburgh, Pettyt being his Chief Engineer, and amongst other places captured Haddington. Pettyt was instructed to examine the fortifications of the town and to put them into a proper state of defence. He had barely time to accomplish this when a combined force of French and Scots, 14,000 strong, advanced to attack the place. The siege was obstinate and protracted. Pettyt had no pioneers nor any skilled labour, and was compelled to trust entirely to the troops composing the garrison for executing the necessary works of defence. The arrangements made by the gallant Engineer proved in the event quite successful. After a lengthy siege, in which the ramparts were laid in ruins—the assailants never, however, venturing to storm—a relieving army under Shrewsbury succeeded in putting a stop to the combat, and forced the allies to retire. At some time during the siege, Pettyt had been made prisoner, and it is recorded that Lord Grey offered the brother of Lady Buccleugh in exchange for him. We afterwards lose sight of him till 1552, when we find him appointed Surveyor of the works at Calais and Guisnes.

* We shall find three Engineers of the name of Petit in the beginning of the 18th century.

The five years' labour which Rogers had spent in developing the fortifications of Boulogne were at length rendered futile by the surrender of the place to the French, which took place on March 20th, 1550, as one of the conditions of a treaty of peace. This appeared to be the commencement of a new era, during which the services of Engineers, so much sought after and so well rewarded during the preceding reign, were no longer to be called into requisition. During the five years of Mary's reign, from 1553 to 1558, the only Engineer whose name appears was Brend, and in his case it was as a diplomatist, and not in the exercise of his profession as an Engineer, that he found favour, and received the honour of knighthood. Lee, Rogers, Burgate, Potinari, and the others were alike neglected and in retirement. It was not until the accession of Elizabeth that we once more find them called into active employment. By that time the English possessions in France had all been lost, and with their sacrifice the necessity for the large expenditure in their maintenance had also come to an end. Elizabeth was, therefore, left free to devote her attention and her revenues to the strengthening of her frontier on the Scottish border. Berwick was still, as it always had been, the leading fortress of that district, and in spite of all that had been already done, still required much strengthening. Sir Richard Lee was, therefore, summoned from the retirement in which he had been allowed to remain throughout the reign of Mary, and despatched to Berwick. Here he found Sir John Brend and Rowland Johnson, the latter holding the post of Surveyor of the works. Brend had been appointed by Mary the Trenchmaster of the border garrisons, but was quite ready to give his old chief loyal assistance in his engineering duties. This, however, was not destined to be of long duration. Brend was by this time quite broken down in constitution, and petitioned to be recalled from the bleak district in which he had been serving. He quitted Berwick on May 18th, 1559, and proceeded to London, where he had an interview with the Queen and her Council. This is the last incident recorded in his life, as he died at Norfolk in August of the same year.

"I am sorry for the decease of Mr. Brend, an old approved acquaintance of my own and a good servant of the Queen. Such men are not thick sown."—(Chaloner to Cecil.)

Lee, deprived of the assistance of Brend, did his best single-handed to push forward the works. He raised a corps of 1,400 pioneers and artificers, bought 1,000 tons of timber at Hull, and a full supply of stone from the quarries at Cliffe, and soon began to make a goodly show. Money, however, came in very sparingly,

and before long he was hard put to it to keep the works going, his people being all in arrears of pay, and not able in consequence to maintain themselves. In one of his letters to the Council, written on May 17th, 1559, Lee stated that from their poor and scanty living they had become unfit for work, and as for the most part they were forced to live on herring, there was no stamina left in them, from which by more generous diet to renew their strength sufficiently to do good service at the fortifications. And again, in another letter, written a week later, he said that none could afford the luxury of a chance meal of fresh meat, even when sick.

"It grieves me to see the multitude exclaim daily of their wants, especially as the works are in such forwardness and in such good order."

Money, however, was only to be had in dribblets, and by degrees it came to Lee's knowledge that objections were made to some of his works. It seems, from what can now be gathered out of the records, that Lee's project involved a new line of rampart, which would necessitate the demolition of some houses, the property of men of authority and influence in the place. Much underhand opposition was therefore brought to bear against him. In this dilemma he wrote to the Queen to send some qualified person to inspect the works. He also seems to have had some secret which he wished imparted to a trusty servant of her Majesty. His letter is dated July 9th, 1559, and runs thus :—

"Seeing a great mass of money has been bestowed upon the fortifications of this town, I beseech your majesty to send some persons of credit to see how the same has been employed. Also that your majesty would direct such a man hither as that your majesty's servant may open to him such secresy appertaining to the fortification of the town, to be considered by your majesty, as according to such lessons as I have learned of the late king, your majesty's father I think it not meet to be opened but to such a one as your majesty shall put in special trust for that purpose."

The Queen's reply is dated August 7th, 1559 :—

"Whereas he in his letters has heretofore requested that she would send thither some trusty person to take a view of the fortifications at Berwick she intending shortly to send Sir Ralph Sadleir into those parts appoints him to take a view of the same. She requires Lee to tell him what he shall think necessary, and to give credit to his communications."

What the secret was which Lee may be presumed to have imparted to Sadleir has not been recorded. We have in Clifford's Sadleir's "State Papers," an intimation of Lee's emoluments at Berwick. His pay was 20s. per diem, besides which he was allowed ten servants at the public expense. He, however, does not seem to

have been regularly paid, as we find that at this time his pay was in arrears to no less an amount than £133 6s 8d. Shortly after Sadleir's visit to Berwick Lee left for London, whence he was sent on a mission to Antwerp, Rowland Johnson remaining in charge of the fortifications at Berwick.

We at this time find a new Engineer at work at Dover, of the name of Thomas Cockerill, with pay at the rate of 6s. 8d. per diem, repairing the pier and "Black Bulwark."

Potinari had, during the reign of Mary, been compelled to leave the kingdom and seek employment in France, where he remained until Elizabeth recalled him to his former service. We find him in 1560 called on by the Council to inspect the fortifications of Portsmouth and report on their condition, at the same time to suggest any new works he might consider necessary to improve the defence.

Lee, having returned from his mission at Antwerp, was employed to design and erect a castle at Upnor, on the Medway, by Royal Warrant, dated March 26th, 1560. Its object was to protect the English fleet when moored in the vicinity of Chatham, as is expressed in the following two lines of the inscription it bore :—

> "Who gave me this show to none other Ende
> But strongly to stande her navie to defende."
> —(Lambard's "Peramb: of Kent.")

Whilst thus engaged, Lee still continued in chief control of the Berwick works, which were being carried on under him by Rowland Johnson. The latter in his reports addressed him as "General Surveyor of all the Queen's works and fortifications of Berwick," or sometimes as "Chief Surveyor and Master of the Queen's Works at Berwick." The fortifications of Berwick were of a very extended character. They consisted of a series of "Mounts" or forts, connected with each other by bastioned lines. One of them was called the "Great Mount above Cowgate," and another the "East Mount, passing by Cowgate." From the south end of the latter ran the new ditch, cut across the "Snook" to the sea. Then came St. Nicholas Mount, only half built, then the North-East Mount, which was followed by the North or Middle Mount. In the curtain connecting these two Mounts was a gateway. Next was the West Mount, the strongest portion of the citadel, in the curtain of which was the Marygate.

When his castle of Upnor had become pretty well advanced Lee returned to Berwick accompanied by Potinari. In a letter which he wrote to the Council, dated at Berwick, April 19th, 1560, after reporting on the progress which Johnson had made during the winter, he urged his desire to complete the fortress in the course of

the summer; he therefore asked for a thousand additional workmen, estimating their cost at £5,000 a month. The object of Potinari's visit to Berwick was to make a special report to the Queen as to the condition of the place, with any criticisms or suggested alterations which might seem to him advisable. He was, therefore, in no sense working under Lee, but rather, if anything, in antagonism. The result naturally was that difficulties arose between them. Potinari considered that there were many defects in Lee's scheme, more particularly in the sea line, which had not yet been begun. Lee chafed under the criticism, and declined to alter anything. On this Potinari drew out a design of his own, which he submitted to the Duke of Norfolk, who was in chief command at Berwick. This, however, proved so costly, that in the end Lee's designs were adhered to.

At this time an expedition under Lord Grey was collected on the border for the purpose of besieging Leith, then held by the French in alliance with the Scots. The Chief Trenchmaster of this force was William Pelham. This is the first time that his name appears, but he rose gradually in estimation and position until he became Lieutenant of the Ordnance. In this attack he commanded a pioneer force of 700 men. The siege of Leith was begun on April 6th, and on the 9th the first battery opened against the place. The besiegers were miserably inadequate for the work they had to do, both as regards numbers and munitions. Their artillery was far too feeble, and they were throughout short of ammunition. Still the most heroic efforts were made, and Pelham with his pioneers distinguished himself greatly, so much so that Lord Grey, in a report to Norfolk, suggested that he should receive the Queen's thanks.

On May 7th a most gallant but unsuccessful assault was made with severe loss to the besiegers. There seems to have been much mismanagement in the affair, and Norfolk, in his report to the Council, said "the thing was marvellously ill handled," and the place "might have been taken with less loss." In consequence of this Sir Peter Carew was sent to the army to report on the affair. He threw all the blame on Lord Grey, and acquitted the Engineer and Master of the Ordnance, on the ground that they had acted under his express orders. Potinari now joined the attack, and at once began mining operations, which he carried on for upwards of a month without achieving any success. Having failed both by assault and mining, Lord Grey turned the siege into a blockade, which lasted till July 6th, when a general treaty of peace was made. In this it was decreed that Leith should be surrendered to the English.

Pelham was one of three English officers deputed to meet an

equal number of the French to see to the execution of the treaty by which the fortifications of Leith were to be demolished.

Sir Richard Lee was present at part of the siege, but does not appear to have taken any action connected with it. His mission was the somewhat perilous one of a reconnaissance of both Leith and Edinburgh. When asked to undertake this duty the old man at once consented,

"Though not so well able to ride as his Grace could have wished."—(Haynes.)

He was completely successful, and made a full report to Norfolk, at the same time sending to the Queen a plan of Leith, which he made by observations from surrounding high ground. The Duke, in forwarding his report to the Queen wrote, "He is worthy to have some letter of thanks."

An engineer named Ridgway had for some years filled the post of surveyor of the works at Portsmouth, and dying at this time was succeeded by Richard Popinjay, who was appointed by Royal Warrant, dated August 15th, 1560.

The fortifications of Berwick were completed before the close of the year 1563, and Lord Grey was appointed its governor, being the first general officer to fill the office. In its present state of importance it required a man of high position to be at its head. Camden called it "*munitissimum totius Britanniæ oppidum.*"

In 1562 an army under the Earl of Warwick was sent into France, to co-operate with the Huguenots of that country, who had risen in revolt. Pelham went with him as Chief Engineer, in which capacity he acted at the siege and capture of Caen. By the treaty of Amboise, of March 25th, 1563, the Huguenots threw over their English allies, and made terms with the Catholics, by which they bound Elizabeth, without her knowledge, to surrender Havre, which she was at the time holding with her forces. The Queen was so enraged at this step that she directed the Earl of Warwick to hold the place against the whole power of France. Pelham was placed in charge of the defence under the Earl, and was full of zeal and high spirit. He declared to Throgmorton that—

"Lord Warwick and all his people would spend the last drop of their blood before the French should fasten a foot in the town."—(Froude.)

In May the enemy appeared before the place with the French King in person, attended by his whole court, and the siege commenced in form. The French engineers, working as they did under the eyes of their King, exerted themselves to the utmost: they drained the marshes in front of the town into the sea, so as to be able to construct trenches and batteries there, and brought

such an overwhelming fire on the walls that they were soon reduced to a ruinous condition. The garrison meanwhile were not idle. Several sorties were made, which inflicted much loss on the besiegers, and destroyed many of their works. The artillery responded briskly to the fire of the French batteries, whilst mines were prepared beneath the numerous breaches that lay open to assault. Pestilence and famine shortly began to enfeeble the garrison, but their spirit remained indomitable. On July 14th the assailants attempted to storm the breaches with some 3,000 troops, but were driven back with the loss of 400 men. This, however, was not effected without a corresponding sacrifice on the part of the defence, who were now reduced to 1,500 half-starved sickly men. The Queen, who had vindicated her honour by the noble defence that had been made against such overwhelming odds, now gave instructions that a capitulation should be effected. This was done on July 28th, Pelham being one of the four officers deputed to undertake the duty, and who afterwards remained as hostages until the terms had been fulfilled. He had been wounded in the siege, as also was the Engineer Goodall, who had conducted the mining operations.

In 1672 we again recover a trace of John Rogers, who had apparently been employed in Ireland for some years past. He was deputed at this time to undertake the conduct of three German nobles, who were anxious to inspect that island. It was desirable that they should not be allowed to see the nakedness of the land, and Burleigh gave Rogers instructions to show them as little as possible, and to confine their tour to a few of the best fortified towns.

Another Engineer of the period remains to be noticed, who was more celebrated for his great learning and mathematical genius than for his warlike achievements. This was Leonard Digges. Markham, in his "Five Decades of Warre," speaks of him as a rare Engineer of profound accomplishments. Fuller says of him that he was of excellent learning and deep judgment, his mind most inclining him to mathematics. He was the best architect of that age for all manner of building, for convenience, pleasure, state and strength, being excellent also in fortifications; and lest his learning should die with him he published for the public profit his "Tectonicon," "Prognostic General," and "Stratioticos"—the first treating of Surveying, the second of Meteorology, and the third of Mathematics as necessary to the military profession.

In 1575 Sir Richard Lee, the greatest Engineer of his age, died, having served his country from the time of Henry VII. to that of Elizabeth, in full employment the whole time, with the exception of the brief and ill-starred reign of Mary. There is no record of

his age, or of where he was buried. All that is known of his early years is that he was acting as a spearman at Calais in 1533. It is probable, therefore, that he had seen something like fifty years' service in the military profession, and over forty in that of an Engineer.

Pelham, who had so distinguished himself at the sieges of Leith, Caen and Havre, had by the year 1567 risen to be Lieutenant of the Ordnance. We find, by a warrant dated in August of that year, from the Earl of Warwick, the Master-General, that Pelham is therein called by that title. In 1574 he was appointed, with Admiral Sir W. Winter, to inspect and report on the fortifications along the shores of the Thames. When doing this they particularly named Queenborough as a place which was highly suited for a naval depôt. In 1579 he was sent to Ireland to aid in the suppression of the Earl of Desmond's rebellion. He was at this time knighted by the Lord Deputy, Sir William Drury. When that officer died, Sir William Pelham was appointed Justiciary of Ireland, with the authority of a Lord Deputy, pending the appointment of a successor to Drury, and held the post until the end of 1580. On February 3rd of that year this provisional appointment was made permanent by patent from the Queen, and his salary of £1,300 a year charged against the Irish establishment. During this period he acted most vigorously against the rebels, and had brought the affair almost to a conclusion before he was superseded by the appointment of the new Lord Deputy. Of his conduct during this period Fuller speaks thus :—

"Say not that he did but stop a gap for a twelvemonth at the most, seeing it was such a gap destruction had entered in thereat to the final ruin of that kingdom had not his providence prevented it. For in this juncture of time Desmond began his rebellion, inviting Sir William to side with him, who wisely gave him the Heaving with a smile into the bargain. And although our knight (for want of force) could not cure the wound, yet he may be said to have washed and kept it clean, resigning it in a recovering condition to Lord Grey, who succeeded him."

On his return from Ireland Pelham was reinstated in his post of Lieutenant of the Ordnance, and in the following year was appointed, together with the Earl of Shrewsbury, Sir Ralph Sadleir, and Sir Henry Nevill, to convey Mary, Queen of Scots, to the castle of Ashby-de-la-Zouche. Nevill and he were afterwards left in charge of the royal captive. This, however, could not have been for long, as we find him again at the Ordnance at the end of 1583, when he rendered an account of his stewardship for the preceding ten years. Unquestionably there was something very wrong in his management of the department, and many scandals

were afloat. Walsingham, in a letter to the Earl of Leicester in December, 1585, says :—

"There falleth out daily, as I am informed, new discoveries of abuses touching the office of the ordnance, as that there should be a hundred brass pieces missing, which doth so aggravate her Majesty's displeasure against Sir William Pelham, in that he did neglect with that care that appertained to oversee the inferior offices as she can hardly endure any man to deal for him."

The result of the peculations which he had permitted to be carried on unchecked was that a claim for £10,000 was made on his estate by the Queen, and he was suspended from his functions, although apparently he continued to draw the salary of his office.

Whilst he was in disgrace the Earl of Leicester, who had been appointed to the command of an expeditionary force in the Low Countries, was most desirous to secure his services as Marshal to the troops, in which position he would be second only to himself. The Queen was obstinate in refusing to grant her favourite's request, and he was equally pertinacious in continuing to make the application.

"I pray you, sir," writes he to Walsingham, "let me know whether I shall have Sir William Pelham or no."

And

"I hear nothing of Sir William Pelham."

And again, later on—

"If Sir William Pelham be not hastened hither, or some such man of judgment in martial affairs, we shall hardly do that good I wish for here."

The Queen was still obdurate, and Leicester began to despair. It is clear, however, that he had a most excellent opinion of the military genius of Pelham, for he again returns to the attack :—

"If her Majesty will look for honour and good service send away Mr. Pelham. We have no such man to govern the army of all the men they have here. . . . . I beseech you, as you find her Majesty well disposed, remember Bingham, but first dispatch away Sir William Pelham, whose abode one month now may hinder us greatly."

These are extracts from various letters written by Leicester to Walsingham, and are only samples of the numerous applications he made for the assistance of the old Engineer.

In the end he was successful. The Queen waived her demands upon the defaulting Lieutenant of her Ordnance, and permitted him to join Leicester as his Marshal. Pelham left London for his new post early in July, 1586, and arrived on the 11th of the month.

"A good aid and comfort he will be to me, and I heartily pray your Lordships from me to thank her Majesty humbly for it."

The campaign now began, and whilst acting as Engineer at the siege of Doesburg, he received a severe wound in the stomach from a caliver shot. Leicester, who was with him at the time, was sorely distressed, as the wound seemed likely to prove mortal, but was much relieved when he found the matter was not so bad as he had feared.

"The Marshal," he writes to Walsingham, "slept well, ate whatever was ordered him with good appetite and digestion, was free from fever and cheerful. . . . So the surgeon is of opinion, whether the bullet be within his body or without, he is out of danger, for which I thank my Lord God most humbly, for as my earnest suit brought him over, so his going now with me was the cause of his hurt."

Pelham recovered from his wound, and aided Leicester throughout his campaign, but the shock was, in the long run, too much for his aged frame, and he gradually sank in health and strength. He served through the winter of 1586, and on into the following year, until Leicester left the Netherlands for England. He was, however, too ill to follow his chief, and died at Flushing on November 24th, 1587.

Markham thus wrote of him:—

"I have, in my own experience, known some principal great commanders, as Sir William Pelham, a noble and renowned soldier, who was Lord Marshal in my lord of Leicester's time in the Low Countries . . who both by experience and observation was wonderfully skilful in this kind" (engineering) "and notwithstanding he had most excellent officers under him and men of exceeding rare knowledge in these practices, yet in these great and important affairs of fortifications and assurances of guarding the camp, he still performed all things by his own proper command and directions, neither could any danger how eminent or certain soever either in the views, approaches, or the discovery of places fit to be fortified, deter or keep him back, but notwithstanding he received many great and almost deadly wounds, still performed these services in his own person."—(Markham's "Five Decades of Warre.")

The death of Sir William Pelham left a great blank in the Engineer history of Elizabeth's reign. Following, as he did, after Sir Richard Lee, the country had for many years been served by men of exceptionally high attainments in this branch of military science, and as the need for such had throughout the time been very urgent, it was well for the monarch and her government that there had been good men ready to answer to their call.

One more crisis the country was called on to go through, and that a danger apparently far greater and more imminent than any which had preceded it. Even before the death of Pelham, the invasion of England by Spain was being prepared for in the arsenals of that country, and a gigantic Armada was rapidly

approaching completion. The national spirit of the English was in consequence thoroughly aroused, and defensive measures were being carried out in all directions. Then, as now, the fleet was expected to bear the main brunt of the attack, and to her navy England looked to preserve her shores from insult. Still, it was necessary to face the contingency of disaster in that arm, and it was therefore decided to develop, as far as time would permit, the defences which had been constructed for the protection of her ports and arsenals, as well as to raise a powerful army to resist invasion. The latter, which numbered over a hundred thousand men, contained in its ranks nearly 15,000 pioneers, drawn from the English and Welsh counties in proportion to their population, Kent making the largest contribution, viz., 2,154; and Huntingdon the smallest, viz., 9 only. This body remained in pay from November, 1587, to the end of September, 1588.

It is impossible to trace the Engineers or Trenchmasters placed at the head of this vast body of military artisans; but it must unquestionably have been large. We are also without record of the work which was done in the hasty repairs to the fortifications, with the one exception of Tilbury and Gravesend. An army to cover London was encamped at Tilbury, under the command of the Earl of Leicester, and he at once proceeded to inspect the works of defence which existed at these two points. The result was in both cases eminently unsatisfactory. At Gravesend he found the fort dismantled, and its platforms rotten. He also inspected the ground upon which it was proposed to throw up an outwork, the plan of which had been brought to him by Lord Hunsdon. This he highly approved of, both as regards site and design. Tilbury he reported to be in still worse state than Gravesend. There was some good artillery there; but the platforms were rotten and useless. The blockhouses were so badly provided with stores that he declared he had never seen places so indefensible or built to so little purpose. Better that they should be demolished than to be a perpetual cost for keeping them to no purpose. There were only ten or twelve barrels of powder in each blockhouse. He therefore demanded a stock to be sent him, equal to the necessities of the times; also from fifty to sixty wheelbarrows and other implements for the pioneers, as well as beer and beef for the garrisons (Leicester to Walsingham, July 23rd, 1588).

Sir Henry Cobham at once ordered 500 pioneers to proceed to Tilbury, to place matters on a better footing, and a few days even wrought a great change in the aspect of affairs. Leicester was able to report that the forts at Gravesend and Tilbury were in as good strength as time would permit. Meanwhile, however, the

Armada was receiving its death blow, and before the end of the month had disappeared. Leicester's division was therefore disbanded on August 17th, and matters resumed their ordinary position. Two Engineers, Frederick Giambelli, an Italian, and Thomas Bedwell, his assistant, had been sent to Tilbury to supervise the works, and they arrived just as Leicester retired. In a few days Giambelli had submitted an estimate of what was required for the new works. As this is a curious specimen, it may be not out of place to quote it here :—

	£	s.	d.
"Borde to make the wharfe two large lodes by estimation	„	lxxx	„
"Faggots for the upper part of the same xx lodes at iiii le lode	„	lxxx	„
"Tall wood for piles ten lodes att vi^{s} le lode .	„	lx	„
"Timber for one drawbridge two gates and one postern by estim^{on} xii lodes at xiij^{s} iiii^{d} le lode	viii	„	„
"Fir poles for the palisades fifteen hundreds at xxx^{s} le C^{l}	xxii	x	„
"Rafters of Oke or Elme for the rayles and principall posts of the Palisado C C worth by estim^{n} viiid le pece	vi	xiii	iiii
"Spikes of Iron for the Palisado three thousand at iiii^{s} le C	vi	„	„
"Spikes nayles henges and two gudgeons of iron and a chayne and locks for the drawbridge and gates coste	„	lxxx	„
"Two Barges to be hired for xv days at vi^{s} the day le pece	ix	„	„
"Six Tombrells to be hired for xv days at iii^{s} iiii^{d} per diem le pece	xv	„	„
"Three hundred laborers for xv days at viii^{d} per diem le pece	cl	„	„
"Fees of officers for xv days	x	„	,
"Carpenters six for xv days at xiiii^{d} per diem le pece	„	cv	„
"Sum totall ccxlvii^{l} viii^{s} iiii^{d}"			

This document was endorsed by Burleigh on August 25th—"An estimate for money for finishing the forts at Gravesend and Tilbury in Essex."

After the subsidence of the threatened storm of the Spanish invasion, only one further incident of importance as regards Engineers remains to be noticed till the close of the Queen's reign. Three officers of that branch of the service were selected to accompany Lord Mountjoy in his expedition to Ireland in

1598. These were Captains Francis Slingsby, Richard Hansard, and Josias Bodley, all of whom distinguished themselves so greatly that they each received the honour of knighthood. In addition to these, a surveyor of the name of Paul Ive also formed part of the force. His duties seem to have been confined to the work of planning and constructing, and he never had any connection with field or siege duties. Sir Josias Bodley, at the close of the expedition, remained in Ireland, where he was appointed Director-General and Overseer of the Fortifications and Buildings in that country (Stafford's "Pacta Hibernici").

CHAPTER III.

The Seventeenth Century.

Engineers under Charles I.—The Commonwealth and Charles II.—Establishment of Engineers for England and Ireland—Duties of the Surveyor-General of the Ordnance—Of the Chief Engineer—Of the Inferior Engineers—Instructions for Jacob Richards as Travelling Engineer—His Report—Attempted Robbery of the Regalia by Blood—Their Rescue by Talbot Edwardes—Details of Ordnance Trains in 1692—Diary of Jacob Richards in the Flanders War—The King's Company of Engineers—Establishment of Engineers in 1697—Reductions consequent on Peace of Ryswick—Formation of the First Train for Peace Duties.

In the preceding chapter we have traced the course of the Engineer branch of the service from the Norman Conquest to the close of the sixteenth century. We have seen that in the earlier part of that time the officer at the head of that service was called "Ingeniator," "Ingeniator Regis," and sometimes "Magister Ingeniatorum" when speaking of the chief of several Engineers. Also that later on, at the beginning of the fourteenth century, a new title appears, and the person previously known as the Engineer becomes the "Attillator."

The next change to be noticed seems to be a division of Engineer duties between field and fortress work, for the former, officers being temporarily appointed for a particular campaign, whilst for the latter men were especially retained to design and supervise the construction of the fortresses or other defensive works considered necessary, and who might or might not be officers of the army. The former were either "Trenchmasters" or "Captains of the Pioneers," the first being the higher in rank and control. Where no Trenchmaster was present the Captain of the Pioneers undertook his functions. They were both officers of the army, selected to perform these special duties during the campaign, bringing their military rank with them, and reverting to their ordinary service when no longer required either as Trenchmasters or Captains of Pioneers. The Pioneers themselves fulfilled much the same duties in the field as now fall to the lot of the men of the Royal Engineers, but in a humbler degree. The Trenchmasters had no control, as such, over the Artillery, which was under the command of a Master of the Ordnance, also appointed for the duration of the campaign. It not unfrequently happened, however, that an Engineer was

appointed Master of the Ordnance, in which case he had command of all branches of the Ordnance service. Thus we find William Pawne appointed Master of the Ordnance for the Scottish war in 1513, and acting as such at the battle of Flodden and the defence of Norham. John Rogers was Master of the Ordnance at the siege of Boulogne in 1544; and William Pelham held the same post at the siege of Harfleur in 1562 and at the defence of Newhaven (France) in 1563. There are several other instances of a similar character. Still in these earlier times it was by no means so common as it became later on, when, as we shall see, it was the usual practice to vest the appointment of Colonel of the Train in the person of the senior Engineer.

The men selected to carry on the more important fortress work were called "Surveyors" or "Surveyors of the King's Works." These officers, when present in the field, as they often were, took precedence of the Trenchmasters, but more as advisers of the General than as executive officers, unless they happened to be officers of the army. They supplied projects for the more important requirements of the service, leaving the Trenchmaster to superintend the execution of the works and to control the discipline of the Pioneers. Some of them appear to have held their appointments for general service, and to have been moved from place to place as occasion demanded. Others were patented for particular posts, and remained where they were appointed for years without change. Examples of this may be found in the case of Rowland Johnson, who was Surveyor of the Works at Berwick from 1559 to 1584; Richard Popinjay at Portsmouth from 1560 to 1587; and George Nevy, his successor, at the same place from 1588 to 1617, if not later.

The title of Surveyor appears to have fallen into desuetude during the reign of James I., the last appointment of the kind that can be traced being that conferred on John Mansell in 1631. From this time the old title of Engineer seems to have once more been revived, and used for all branches of the service, whether fortress or field. In the few cases in which the title of Surveyor had been retained prior to this date, it was applied only to officers who held posts subordinate to the Engineer. These latter appear to have also settled into two distinct branches. First and highest in position were the King's Engineers, who held permanent appointments and were patented as such. Their function was to design and construct fortifications, to inspect, report on, and draw plans for repairs and improvements in the defences of the country; in fact they occupied very much the same position as the Surveyors of the previous reigns. Secondly, the Engineers who were appointed to fill that office in the Trains which began to be formed in

the seventeenth century and which included all branches of the Ordnance, viz., Artillery, Engineers, and the Store or Munition branch. These Engineers were only engaged for the period during which the Train was maintained in force.

The first record which we have of this nature is in the year 1618, when the Engineer branch of the Train consisted of six Engineers, two Comptrollers of the Fortifications, two Battery Masters, one Captain of Pioneers, and one Trenchmaster. The officer who commanded the Train might be selected from any branch of the service, and, as has been already said, gradually came to be most frequently the Chief Engineer.

The reign of James I. was not prolific in bringing forward men of distinction in engineering matters. We find the name of John Van Cranveldt as a King's Engineer, who designed a fort at Guernsey, which was called after him; Bernard Johnson was another King's Engineer, who was killed at the landing in the Isle de Rhé in 1627. None of the remainder seem to have been men of much mark. The peaceful days of James's reign came to an end, when Charles took his place, and he early realized the necessity of strengthening the Engineer branch of his service. As he was a good paymaster he found no difficulty in securing the best men, some English and some foreigners, the latter being principally Dutchmen. Of these the most distinguished were Cornelius Drebel and his son-in-law Abraham Kuffler. Drebel was a mathematician and chemist of great distinction, the inventor of the microscope and thermometer, and also the discoverer of the art of dyeing in scarlet. Kuffler developed and improved this art, establishing the first dyeing factory in England, at Bow, in 1643 (Beckmann). Drebel was appointed by Charles Chief Engineer, in which capacity he served with the expeditions to Rochelle and the Isle de Rhé, with pay at the rate of £150 per mensem (Bruce, 1629-31). He died in 1634. There is no special warrant now to be traced appointing him Chief Engineer, but the fact is proved by a statement made on the occasion of a claim on the part of Sir Bernard de Gomme, a subsequent Chief Engineer, for certain travelling allowances. On this Sir William Compton certified that he had

"caused the books of the Ordnance Office to be inspected, and it appeared that Cornelius Drebel and others, who whilst they lived were principal engineers as Bernard de Gomme now is, usually for the time they were actually employed in the King's immediate service had 20s. a day to defray their travelling charges."

Of the English Engineers who were serving at the same time as Drebel, Kuffler, and other Dutchmen, the following names can be

traced:—Bernard Johnson, already referred to as an Engineer in the reign of James I.; "Old Thomas the Engineer," so spoken of in the public records (Bruce, "State Papers," 1628-29); John Manley; Capt. John Paperill, who had served as an Engineer at the sieges of Ostend in 1601-3, and Gulick in 1610 (Bruce, 1627-28); Capt. Thomas Rudd, patented as Chief Engineer on July 10th, 1627 (Rymer's "Fœdera)"—he had served as an Engineer in the Low Countries, and was sent for by the King to return to England to take up the duties of his new appointment (Douglas Hamilton, "State Papers," 1638-39); Francis and Edward Charter, and Michael Lambert, who are all three mentioned by Bruce as Engineers in the year 1627.

When the expedition for the Isle de Rhé was being prepared, the King directed the Earl of Totnes, Master of the Ordnance, to select two Engineers and two Surveyors of Works of Fortification to join the force. Robert Norton and John Mansell were named for the former post, Thomas Heath and Richard Heath for the latter. Bernard Johnson was Chief Engineer, and, as already said, was killed at the landing on July 12th, 1627. John Tradesant, another Dutchman, appears also to have served in this campaign (Bruce, 1627-28). After the death of Bernard Johnson, Robert Norton was appointed to fill his place as Engineer at the Tower of London.

John Paperill was made Chief Engineer of England and Wales on December 10th, 1628, and seems to have exercised his functions with great zeal. He is to be traced visiting the King's works at Gravesend, Tilbury, Isle of Wight, Guernsey, Sandown, Deal, Walmer, Archcliffe, and Southsea Castle, directing large repairs and making arrangements for the execution of the ordinary incidental work.

Charles sent a force to aid Gustavus Adolphus, King of Sweden, in his efforts to recover the Palatinate, in which were included the following five Engineers:—Thomas Humphrys, James Slip, Jan de Bos, Mathias Van Voord, and Captain Omkaes. They were all present at the siege of Bois-le-Duc. James Prempart, a Swedish Engineer, was Chief Director, and has written an account of it in which he speaks highly of the vigour, skill, and courage of the English Engineers, who "stood well in the estimation of those best entitled to decide upon merit and to commend." Captain Omkaes, "a worthy engineer, shewing his bodie too open was snapt off and slain with a firelock" (Prempart's "Siege of the Busse," fol., 1630).

We now approach the period of the great Civil War, and we find serious gaps in the records through that eventful period, so that it is no easy matter to trace the names of those who took part in the

struggle on either side. This difficulty is enhanced by the custom that so much prevailed in the records which have survived, to speak of the Engineers who were engaged by their titles, and not by their names.

Those who can be traced to have served on the Royalist side are as follow:—

Thomas Rudd, the Chief Engineer. For his adherence to the Royal cause his property was decimated (Thurloe's State Papers, 1638-60).

Lieut.-Col. John Paperill.

Sir Charles Lloyd. This officer was in the Earl of Northumberland's expedition to the north in 1640, in the action at Brentford in 1642 ("Mil. Memoirs of John Gwynne"), and was taken prisoner at Sudeley Castle by Waller, June 9th, 1644. He was Quartermaster-General of the King's army in Cornwall in 1644, when he was entrusted with the guard of the pass near Lostwithiel (Symonds' "Diary of the Marches of the Royal Army"). He was Governor of Devizes Castle in 1645, and as such commanded in the action of Rowde, in the attack and demolition of Rowden House, and in the defence of Devizes, where he was compelled to surrender to Cromwell.

Sir Godfrey Lloyd, who was brother to Sir Charles. He does not appear to have seen any active service in England during the war, but was proscribed as a conspirator. In 1655 he conducted the siege of Condé, where he was severely wounded in the head with a musket-ball (Clarke's "Life of James II."). He afterwards took service with the Duke of Brunswick (Thurloe, by Birch, vi.).

Sir Bernard de Gomme was at Marston Moor, Newbury, and Naseby (Add. MSS., 1670), Chief Engineer at the siege of Bristol, and one of the nineteen officers who signed at the capitulation of the place (Rushworth, vol. i., part 4).

John Mansell was Second Engineer at the siege of Bristol.

John Lanyon was one of the King's Chief Engineers,* and, owing to his unflinching loyalty, was placed under sequestration and imprisoned "(Green's State Papers," 1660-61).

Samuel Molineux was Clerk-General of the King's Works and Buildings in Ireland in 1612 (Lascelles' "Lib. Man. Pub. Hib."). He commanded the artillery at the battle of Ross (Carter's "Life of James Duke of Ormonde").

The principal Engineers on the Parliamentary side were as follow:—

* It may here be noted that at this time the title of Chief Engineer was not confined to the individual at the head of his branch of the service. There were several men holding the title at the same time. Thomas Rudd, John Paperill, and John Lanyon were all Chief Engineers together.

John Lyon, who was the first Engineer given a warrant under the Parliament. He was attached to Essex's army, and continued to serve as an Engineer throughout the war ("List of the Army raised under the Command of H.E. Robert Earl of Essex; Lond., 1642," in British Museum).

Major Morgan was Chief Engineer, and Major Browne was Second Engineer, at the siege of Lathom House.

Cornelius Van Behman was at the siege of Newark in 1644. He was taken prisoner, and confined in Stirling Castle till its capture from the Royalists in 1651.

Peter Manteau Van Dalem is styled Engineer-General in Sprigg's "Ang. Rediv.," 1647.

Captain Hooper, Engineer Extraordinary. He conducted the siege of Banbury Castle, for which the Parliament voted him a gift of £500 in testimony of their approbation of his eminent services and success (Whitelock's "Memorials"). He was also at the siege of Raglan Castle and the defence of Nottingham.

Eval Tercene is styled by Sprigg Chief Engineer.

Nathaniel Nye was Chief Engineer and also Master Gunner of Fairfax's army. He gained great distinction in both capacities at the siege of Worcester. He was considered one of the best mathematicians of the day, and published the "Art of Gunnery" in 1648.

Lieut.-Col. John Roseworme was one of the last Engineers who appear to have received pay as such under the Commonwealth (Thurloe, by Birch).

These names are taken from various sources; but some of them may be traced in the Train which was formed for the war. In 1642, when the army was placed under the Earl of Essex, the Engineer contingent of the train was—one Engineer (John Lyon), six Assistant Engineers (names not known), three Captains of Pioneers (Henry Frodsham, Henry Roe, and John Dungan), three Lieutenants of Pioneers (Gerald Wright, Benjamin Hodson, and Thomas Williams), and a Battery Master (Edward Okely).—("List of Army under Earl of Essex," British Museum.)

In 1645 the army was remodelled and placed under Fairfax, when the Engineer roll was—Engineer-General (Peter Manteau Van Dalem), Engineer Extraordinary (Captain Hooper), Chief Engineer (Eval Tercene), two Engineers (Master Lyon and Mr. Tomlinson), Captain of Pioneers (Captain Cheese).—(Sprigg's "Ang. Rediv.")

In 1647 the Engineer portion of the Train was one Chief Engineer at 10s., six Engineers at 6s. In the following year a seventh Engineer was added. This Train was gradually reduced, and became extinct before the Restoration.

When Charles II. came to the throne in 1660 the old establishment of three Engineers for the Ordnance service was revived. This limitation of the number operated with extreme hardship on the numerous Engineers who had fought and bled for the Royal cause, and who had suffered for their loyalty. It must have been no easy matter to make a selection from the long list of those who had claims. Sir Charles Lloyd, Thomas Loup, and Richard Delamain were named for the establishment; Sir Bernard de Gomme and John Mansell were granted pensions—the former of £300 a year, the latter of £80 (Patents, 1602-69, Tower). John Lanyon was given office under the Admiralty, where he rose to a high position.

Sir Charles Lloyd did not long survive his restoration to the position of Chief Engineer of England, as he died in 1661, and was succeeded in his office by Sir Bernard de Gomme, on April 1st, 1661 (Patents, 1602-69, Tower).

This little establishment of three Engineers was wholly inadequate to the wants of the service, and was therefore supplemented by taking additional Engineers into pay for special duties. When these were completed, they were either discharged with a gratuity, or placed on an allowance in the form of a half-pay, to ensure their being available for further service if called on. A similar course was followed when Engineers were required for expeditions or for ordinary colonial work. Commissions were given to as many as were considered necessary as part of the Ordnance Train, and they were paid from the special money grants voted by Parliament for those particular services.

It was clear that with such a limited strength it was not possible for the Engineer branch to fulfil all the duties that should have fallen to it. To obviate this difficulty, Royal Commissions were sometimes issued to control particular works, under which officers other than Engineers were selected to carry them out. In these cases the Office of Ordnance had no connection with the services, the Commission reporting direct to the King. Occasionally an Engineer from the Ordnance establishment was attached to the Commission, with a view to rendering such professional assistance as his other occupations permitted.

Governors of fortresses or castles also considered themselves responsible for the defensive efficiency of their charges, and looked to the King to supply funds to defray the expenditure they had incurred. Works of this kind were often carried out without ever having been referred to an Engineer, and some strange mistakes were at times made in consequence, and much money needlessly wasted.

The first step in the augmentation of the establishment took place

in 1669, when a warrant was issued to two Cadets to visit foreign garrisons and fortresses, and to take service in campaigns and sieges, in order to gain experience and a practical knowledge of their profession as Engineers. They were also required to study mathematics, fortification, and drawing. The names of the two Cadets were Edmund Bray and Walter Long. At first their travelling allowance was fixed at £60 a year each, but this was found to be insufficient, and was increased to £100 (Warrants, 1663-80, Tower). The title of Cadet was soon changed into that of Engineer, and as the system was kept up it became virtually an augmentation of the establishment to that extent.

There was an Irish Train of Ordnance quite distinct from that for England, to which one Engineer was attached. He was styled at the time (1669) engineer and overseer of the fortifications, and he received pay at the rate of 5s. per diem (Somers Tracts, by Sir W. Scott). He was the junior of the three Engineers on the Irish establishment. The Chief Engineer of Ireland, William Robinson, who was appointed on January 11th, 1671, was styled engineer-overseer, surveyor and director-general. His salary was at first £150 a year (Lascelles, "Lib. Man. Pub. Hib.," i., Part 2), but on March 28th, 1679, it was raised to £300, to assimilate it to that of the Chief Engineer of England *(ibid.)*.

Capt. Martin Beckman had been some years previously attached to a Train for service at Tangiers. When he was recalled from that duty he was employed in England, where he showed so much aptitude and talent that in 1670 he was patented as Third Engineer of the kingdom, with a salary of £180 a year (Quarter Books, Tower, Dec., 1670), and this was raised to £250 in 1674, when he became Second Engineer.

Various names appear from time to time of men attached as Engineers for different purposes, but it seems scarcely necessary to record them all—only those who afterwards came to the front need be specially mentioned. In the year 1683 a Warrant was issued in which "Rules, orders, and instructions for the future government of the Office of Ordnance" were laid down. This was dated on July 25th. Up to this time the responsibility of the Board of Ordnance for the construction of military works had never been clearly defined. Now, however, the Surveyor-General was distinctly entrusted with the charge.

"When any Works, Buildings or Repairs in and about Our Fortifications, or for other Our Services are to be undertaken he is to compute and calculate the Charge thereof and to propose the same to the Master Gen^{ll} of Our Ordnance or to Our Principal Officers, or the Major part of them, expressing the particular Scantlings and Dimentions of the Materials therein to be used and the lowest prices for which they may be

had, likewise to Survey all the Works, Buildings, and Repairs, taking the Assistance of Skilfull and experienced Men if it be requisite, and carefully to examine that they be well and sufficiently done, whether undertaken by the Great, Day Work, or upon any other Contract or Agreement, and when finished to measure the same and certifie to y^e^ Mas of Our Ordnance or Principal Officers the just and due performance of the respective undertakings, before any Bills be allowed for Debentures to be passed in order to payment thereof."

The duty of all the other officers is also fully detailed, as witness the following:—

"*Instructions to our Principal Engineer.*

"He ought to be well skilled in all the parts of the mathematicks, more particularly in Stereometry, Altimetry, and Geodesia, to take the Distances, Heights, Depths, Surveys of Land, Measure of solid bodies, and to cut any part of ground to a proportion given, to be well skilled in all manner of foundations, in the scantlings of all timber and stone and of their several natures, and to be perfect in Architecture, Civil and Military, and to have always by him the descriptions or models of all manner of Engines useful in Fortifications or Sieges, to draw and design the situation of any place in their due prospects upright and perspective, to know exactly the rates of all materials for building of fortifications, thereby to judge of any estimates proposed to him to examine.

"To keep perfect draughts of every the fortifications, forts and fortresses of our Kingdom, their situation, figure, and profile, and to know the importance of every one of them where their strength or weakness lies, whether the lines be drawn to a due length or the chief angles truly formed.

"To make plots or models of all manner of Fortifications, both Forts or Camps commanded by Us to be erected for our service, and thereof to make the propositions and to draw estimates of the charge to be considered of by the Master General of our Ordnance and principal Officers thereof, and to be presented to us for our approbation. He is likewise to represent to the Master General of our Ordnance or principal Officers thereof the materials requisite and necessary to be therein used and employed, and to see that the same be good and fit for our service, and to cause his assistant or master workman under him to instruct the workmen employed how to use and handle with advantage their shovels, spades, mattocks, wheelbarrows, &c. and how to gain time in working, to see likewise that the Overseer or Clerk of the cheque for the fortifications look unto the tools and materials and take care that they be preserved, and that what are broke be forthwith repaired and amended, if so it may be; and as soon as the work is done to cause them all to be returned into our magazines, and to take care that they keep an account not only of the workmen but also of the money paid them for their wages.

"As often as he shall be commanded by us or directed by the Master General of our Ordnance to visit all the fortifications in our Kingdoms, and to make his report in writing of the condition he finds them in and

BATTERSEA PUBLIC LIBRARIES

exhibit the same to the Master General of our Ordnance to be by him presented to us, and to cause the draughts or designs thereof to be left in the office of our Ordnance there to remain for shelter and information of our said Master General and principal Officers of our Ordnance as occasion shall require.

"That when any new designed Fortification is by Us commanded to be set out to see the same done either by himself or the Chief Engineer next him, and to be present at the beginning or laying of any part of the foundation; and when any undertaker or undertakers have contracted for carrying on the works either in part or in whole to see that the same be performed according to the articles and conditions of their contracts, and when they have finished their undertakings to make a measurement thereof and certify the same to our Master General and principal Officers of our Ordnance under his hand.

"To endeavour to provide for our service good and able Engineers, Conductors, and Work-Bases, and not to recommend any to the employ of an Engineer but such as are sufficiently qualified to be so, which that it may be known, he is to examine what skill the person that sues to be employed hath in the mathematicks, and particularly in Fortifications, what works he hath undertaken or managed, in what campaigns he hath served, at what sieges he hath been, the manner of trenches and of the offence and defence, and having gone through this or such like examination then to give his report thereof in writing to us or the Master General of our Ordnance.

"In time of action or when there is intention of forming or laying a siege against any place, he is to have a draught or ground plot of the place if possible, if not, to take a careful view of its situation as near as he can and thereof to make draught and to see where the attack or attacks are most advantageously to be made, how the circumvallation and contravallation (if need be) is to be laid out and designed, and to direct and see the breaking of the ground, planting of Batteries, making of platforms, conducting of trenches and mines, and to have such Engineers and Conductors as will be necessary to see them carried on and executed, to be constantly moving from one attack to another to see that all possible expedition be made, and so to divide the Engineers under him that they may relieve one another, and never to suffer (as far as his authority extend) any single person to be wholly entrusted with a work or an attack without he be well assured of his ability and capacity to undertake and discharge such a service."

"*Instructions for the Duties of the Inferior Engineers.*

"They are to endeavour the Improvement of their Knowledge in all things belonging to an Engineer, and to render themselves capable in all respects for our Service by attaining to the skill of the several particulars mentioned in the first Article of Instructions of the Duties of Our Chief Engineer. To observe and obey the Directions of Our Chief Engineer in all things relating to our Service either at home or abroad, as far as Our said Chief Engineer shall be by us empowered or commissioned by the Master General of the Ordnance to act. To shew their

designs to Our Chief Engineer and to take his advice or assistance therein, and to receive his judgment whether (upon examination) they may be thought sufficient or fit to be presented to Us or to the Master-General of Our Ordnance."

In this Warrant the Establishment of Engineers was fixed as follows, coming first on the list, under the general designation of "Under Ministers":—

Principal Engineer, £300 per annum, Sir Bernard de Gomme.
Second „ £250 „ „ Major Martin Beckman.
Third „ £150 „ „ Thomas Phillips.

Two ordinary Engineers, £200, Thomas Culpepper and Richard Wharton.

"Young men to be Bredd up in the Art and Knowledge of Fortification &c."

This Warrant for the first time gave distinct and special authority to the various persons named therein. The Chief Engineer was now officially made responsible for the attainments and efficiency of the members of his branch. He was also given the nomination of fresh men, by which he had power to ensure that none but duly-qualified persons should be employed as Engineers. Up to this time the Engineers in charge of particular works corresponded direct with the King, the Board of Ordnance, the Ministers, and various other authorities, without any reference to the Chief Engineer, who apparently had no control whatever. Now this was to be changed. It is true that still there were no instructions forbidding direct reference to higher authorities; but sufficient is said of the "Inferior Engineers" to show that they were to take their orders from their Chief. We may look upon this Warrant as the first stage in that process of welding the disjointed members of the Engineer Service into something approaching a compact corps. From this time that process went on with rapidity, and in a few years we shall see it brought to completion.

The office styled "Principal Engineer" in the Warrant was never so called in any other place or document. The most usual term was "Chief Engineer," and sometimes "Engineer-General."

In the summer of the year 1685 Jacob Richards was appointed Engineer, to travel and improve himself. As the instructions he received on the occasion are a type of what the duties of a travelling Engineer may be assumed to have been, they are here annexed:—

"Instructions for Mr. Jacob Richards to improve himself in Foreign parts beyond Seas, to be employed at his return as One of His Majesty's Engineers in England.

"You are to set forward on your journey towards Hungary with all convenient speed, and there to survey, learn, and observe the Fortifications and Artillerie not only that of Hungary but of places in

your way thither and to keep an exact Journal of every day's proceeding, and when you come into the next Campaign in THE EMPEROR'S ARMY to observe all the MARCHING and COUNTERMARCHING, and in the BESIEGING of any town to observe their making APPROACHES, MINES, BATTERIES, LINES OF CIRCUMVALLATION and CONTRAVALLATION, the height and thickness of their parapets and breadth of the Grafts (trenches). You are to keep a daily journal on the march of the Army, where they lodge, and in what order they march, as also the form of their QUARTERING by Regiments or Battalions of Foot or Horse, and likewise to see their manner of ATTACKING any place or ENCAMPING of their Armies, and to make as many Draughts of Places and Fortifications with their Profils as you can conveniently, having first obtained permission to do so either from His Imperial Majesty or the General officers Commanding His Armies, that so in your return to England again you may by your improvement render yourself fit to be employed as one of His Majesty's Engineers for his service in England And that you present to the Rt Hon^ble^ the Lord Dartmouth, Master General of the Ordnance (and) of this Board an Account from time to time of all your proceedings Dated at the Office of His Majesty's Ordnance Oct^r^ 17th 1685.

"Signed Chris: Musgrave, Ber. de Gomme, Edw. Sherburn, J. Garden."

The result of these instructions was a lengthy diary, presented to the Board on Jacob Richards' return, of which the following extracts give a good sample :—

"(Maestricht.) They're now enlarging the Ramparts and planting them with Trees, viz 2 rows, one at the foot of the Foot bank (banquette) of the Parapet and the other within 3 foot of the extremity of the Rampart. The Trees are 10 feet distant from one another. I observed that throughout all HOLLAND as well as here they take great care to plant their work with Trees, and in bringing up their Earth or Turf work, be the soil never so good, they interlace every floor of earth with willow boughs and grass seed, which extremely binds and secures their works, which practice we have wanted in England, and has been the greatest reason of many of our Earth works falling and giving way. . . When any new Work is to be gone in hand with the DIRECTOR-GENERAL or Intendant of the FORTIFICATIONS gives order that publication be made thereof, so that such Artificers as have a mind to undertake it may make their proposals for performing the same. He that undertakes at the lowest rate has the work, and their money paid them according to contract. . . . .

"I arrived at VIENNA. The next day I waited on Count de Taafe, who received me very kindly and offered me the benefit of his table and tent. I likewise delivered my letters to the Prince Herman Van Bude, President of War, and to Cardinal Bouvisie, the latter of whom seemed very urgent for my engaging into the Emperor's service by receiving a salary which I told them I could not do, that I received a salary from His Majesty of Great Britain, my natural Prince and Master, and could not without his leave receive any from others, that I was obliged never-

theless to serve this coming Campaign as *volontaire* for my better improvement. They answered that they desired I would act as Commissionated, and to that intent I should be empowered and a present of 500 ℔ (thalers) given me for my equipage, but in case I should have leave to stay with them any fixed time I should likewise receive a very good salary."

On arrival at Vienna he joined the staff of General Taafe.

"At this time Father Gabriel, a Franciscan Friar of Savoy, learned and knowing in the composition of Artificial Fires was at work. . . . This Friar makes a compounded of Mercury which is of so great effect that ½ oz mixed with the allowance for any Cannon though never so much fortified will make her split. Of this powder he makes his Bombs. I likewise observed that his powder is mixed with Antimonium, and that in loading a Bomb of 10 inches he does betwixt whiles put in 5 or 6 pounds of Musket bullets, which he says is of great effect and assists very much towards the violent splitting of the Bombs."

Then comes an account of the siege of Buda, during which Jacob Richards acted as an Imperialist Engineer:—

"July 4th. Last night I was desired by the Generals to advance a Line from the place where three Lines meet, so as to flank the outer of the three Lines and join the wall of the old Town looking into St Pauls valley, which I accordingly did and made a Place of Armes of an house I met capable to hold about 2 or 300 men. Behind and parallel with the line which went from this house and home to the wall I made a covered place for a Battery for 4 Mortars." . . . . July 13th. An assault on the breach was made by the Duke of Lorrain, but it was repulsed. . . . 14th August. In an engagement with the Turks, where the Christians lost 3,000 men, "Mr Fitz James (afterwards Duke of Berwick) was in all the action with Count Taafe and deported himself with as much firmness as ever young gentleman did." September 2nd "A day that will be famous in all ages where Christianity is known." At a fresh general assault the fortress was taken. "Thus Buda the metropolitan city of Hungaria was deflouered by the tenth assay and forced her Virginity, which in nine former sieges was never brought so much as to capitulate." The report ends thus. "9th. I parted from Bude in boat for Vienna where I arrived the 17th inst.

"Your most humble and obedient servant

"Jacob Richards."

—(Stowe Collection, Richards Papers, I. 111.)*

Sir Bernard de Gomme died at the Tower on November 23rd, 1683, and was buried in the graveyard of the chapel on November 30th. This has since become the parade ground of the Waterloo barracks, and the memorials of the dead are removed. Sir Martin Beckman (he had been knighted in March, 1685) was

* Jacob Richards published a narrative of the Siege of Buda.

appointed to the vacant post, Thomas Phillips becoming Second Engineer, and Jacob Richards was made Third Engineer, Talbot Edwardes being nominated to fill his place, "to travel to extend his professional knowledge." These names are given, as the officers bearing them all became distinguished Engineers.

In 1688, the threatened invasion of the country by William of Orange induced James II. to collect an army to oppose the descent. As part of this force, an Ordnance Train was formed by Warrant dated October 19th, 1688. Sir Martin Beckman was made the Chief Engineer of the Train, with power to take command in the absence of Sir Henry Sheres. Under him were Jacob Richards and Holcroft Blood, the latter holding the post of Captain of the Pioneers.

The mention of Holcroft Blood, and previously of Talbot Edwardes, leads to a reference to the attempted robbery of the Crown jewels at the Tower by Blood's father, Talbot Edwardes' father having the charge of the regalia. The incident occurred in 1673. Colonel Blood having determined to possess himself of the jewels, called upon Talbot Edwardes, senior, and saw them in the ordinary way. He then laid himself out to ingratiate himself with the keeper, assuming for the purpose the character of a clergyman. When he had completely succeeded in this, and had become intimate at the house, he fixed on a day for the attempt, and, bringing two confederates, requested Edwardes to show his friends the regalia. This Edwardes consented to do, and the party adjourned to the Jewel Office. Here, whilst one of the confederates attracted the attention of the old man, Blood suddenly struck him from behind a blow on the head and felled him. Having thus disposed of the keeper, one seized the orb, another the sceptre, and Blood the crown. At this critical juncture young Talbot Edwardes appeared on the scene. He had been serving as an Engineer to the Train in Flanders, and had arrived unexpectedly at home on leave. He ran down to the Jewel Office to see his father, who was known to be there with his friends. On coming to the spot he found Edwardes lying bleeding and senseless on the ground, whilst one of his friends was busily engaged in filing the sceptre in two to facilitate its transport, and the others were concealing the remaining articles in a cloak. By his promptitude and energy they were all three secured, and the robbery prevented, young Talbot receiving a wound from Blood in the affray. A grant of £200 was made to the father and £100 to the son for their gallantry and suffering in rescuing the regalia. Much mystery has always been attached to this affair. Blood was never punished; on the contrary, he subsequently received a pension, and his son was, as we have seen, appointed an Engineer

on the establishment, and, as we shall see further on, was unjustly promoted out of his turn over the head of Jacob Richards by King William's special Warrant.

The Revolution of 1688, and the consequent accession of William and Mary to the throne, led to an active participation on the part of England in the war that was being carried on abroad. A Train was ordered to be prepared for Flanders early in 1692, and a few months later another, which was to act with the Channel Fleet against the French coasts. As these two are very good types how the Ordnance Trains of those times were constituted, the detail of their numbers is here given.

TRAIN FOR FLANDERS, FEBRUARY 27TH, 1692, WHICH SERVED IN THE BATTLES OF STEINKIRK (1692) AND LANDEN (1693).

The Artillery included 8 Demiculverins, 10 Sakers, 20 Three-pounders, 4 eight-inch Howitzers, and 2 small Petards, all brass; 5,000 Grenades, 40 Tin Boats (Pontoons), with Carriages complete, 200 Waggons Ammunition, Tents, Intrenching and Artificers' tools.

List of Officers and Attendants.

One Colonel and his Clerk, £2. (This was Colonel John Wynant Gore, a Dutch Engineer officer, who was also Chief Engineer. His commission as Colonel to the Train in Flanders was dated April 1st, 1692.)

One Lieutenant-Colonel and his Clerk, 19s. (This was Jacob Richards, who was also Second Engineer. His commission bears the same date as that of Colonel Gore.)

One Major at 16s. (This was John Simon Schlunt, a Dutchman.)

Three Engineers at 10s. (These were John Bott, Thomas Glover, and Michael Richards.)

One Comptroller and his Clerks, £3; 1 Captain-Lieutenant at 11s.; 1 Battery Master at 12s.; 1 Assistant ditto at 4s.; 1 Adjutant at 8s.; 1 Quartermaster at 8s.; 1 Chaplain at 8s.; 1 Paymaster at 8s.; 1 Assistant ditto at 4s.; 1 Auditor at 6s.; 1 Master Surgeon and Assistant at 10s.; 1 Provost Marshal at 3s.; 2 Assistant ditto at 2s. 6d.; 1 Kettle Drummer at 4s., and his Coachman, 3s.

Mortar Detachment.—One Petardier at 6s.; 4 Firemasters at 5s.; 4 Bombardiers at 2s. 6d.

Gun Detachment.—One Captain-Lieutenant at 11s.; 6 Gentlemen of the Ordnance at 7s. 4d.; 1 Master Gunner at 5s.; 2 Mates at 3s.; 2 Corporals at 2s. 6d.; 40 Gunners at 2s.; 80 Matrosses at 1s. 6d.

Company of Bridgemen.—One Captain of the Tin Boats at 6s.; 1 Assistant (or Lieutenant) at 3s.; 2 Corporals at 2s. 6d.; 40 Private men at 2s.

Miners.—One Sergeant at 2s. 6d.; 9 Miners at 1s. 6d.

Artificers.—One Captain of Carpenters at 6s.; 2 Mates at 3s.; 18 Carpenters at 2s. 6d.; 1 Master Wheeler at 4s.; 6 Wheelwrights at 2s. 6d.; 2 Coopers at 2s. 6d.; 1 Master Smith at 4s.; 4 Smiths at 2s. 6d.; 1 Master Tinman at 5s.; 2 Tinmen at 3s.; 1 Conductor Plumber at 4s.; 1 Master Collar Maker at 4s.; 6 Collar Makers at 2s. 6d.; 1 Tent Maker at 4s.

Store and Transport Attendants.—Two Commissaries of Stores at 8s.; 2 Clerks to ditto at 4s.; 8 Conductors of Stores at 3s.; 600 horses were required for the guns and tin boats, and 600 horses with 200 waggons for the conveyance of stores.

(Ord. Papers Addl. 5,795, f. 60-68.)

TRAIN TO PROCEED WITH THE CHANNEL FLEET ON THE SUMMER EXPEDITION IN 1692.*

List of Artillery.

Fourteen twenty-four pounders, 16 eighteen-pounders, 8 twelve-pounders, 10 eight-pounders, 6 six-pounders, 8 thirteen-inch Mortars, 12 ten-inch Mortars, 2 eight-inch Howitzers, 6 Brass Petards, 20,000 Grenades; also Spare Arms, Tents, 29 Pontoons, 100 Scaling Ladders, Intrenching Tools, and plenty of Timber and Necessaries for Miners.

List of Officers and Attendants.

One Colonel and his Clerk, £2. (This was Sir Martin Beckman, the King's Chief Engineer, whose commission to be Colonel of the above Train of Artillery is dated May 1st, 1692.)

One Lieutenant-Colonel and his Clerk, 19s. (This was George Brown, Esq.)

One Major at 15s. (This was John Henry Hopeke, Esq.)

One Chief Engineer at 19s. (This was Colonel Woolfgang William Romer.)

Twelve Engineers at 10s. Their names were, Theodore Dury, Christian Lillie, John Gobett, Francis Cadoule, Lewis Petit, George Conradi, Oliver Darcourt, Eleazar Menting, Alexander Martinery, Jean Chardellan, Peter Carles, and Henry Lamerston. 1 Comptroller and his Clerks, £1; 1 Battery Master at 12s.; 1 Assistant to ditto at 4s.; 1 Adjutant at 8s.; 1 Quartermaster at 8s.; 1 Chaplain at 8s.; 1 Paymaster at 8s.; 1 Assistant to ditto at 4s.; 1 Master Surgeon at 8s.; 2 Assistants at 3s.; 1 Provost Marshal at 3s.; 2 Assistants to ditto at 2s. 6d.

Mortar Detachment.—One Firemaster at 10s.; 19 Fireworkers at 5s.; 1 Petardier at 6s.; 1 Assistant to ditto at 2s. 6d.; 30 Bombardiers at 2s. 6d.

---

* These Summer Expeditions seem to have recurred annually.

Gun Detachment.—One Master Gunner of England at 13s. 4d.; 1 Captain-Lieutenant at 10s.; 8 Gentlemen of the Ordnance at 7s. 4d.; 92 Gunners at 2s.; 92 Matrosses at 1s. 6d.

Company of Bridgemen.—One Captain of the Tin Boats at 6s.; 1 Assistant (or Lieutenant) at 5s.; 2 Corporals at 2s. 6d.; 30 Bridgemen at 2s.

Artificers.—One Master Tinman at 5s.; 2 Tinmen at 3s.; 1 Master Carpenter at 4s.; 19 Carpenters at 2s. 6d.; 1 Master Wheelwright at 4s.; 6 Wheelwrights at 2s. 6d.; 1 Master Cooper at 4s.; 1 Assistant to ditto at 2s. 6d.; 1 Master Smith at 4s.; 7 Smiths at 2s. 6d.; 1 Master Farrier at 4s.; 2 Farriers at 2s. 6d.; 1 Master Collar Maker at 4s.; 2 Men at 2s. 6d.; 1 Tent Maker at 4s.; 1 Assistant to ditto at 3s.; 1 Basket Maker with his Assistant at 5s.

Store and Transport Attendants.—Two Commissaries of Stores at 8s.; 2 Clerks to ditto at 4s.; 18 Conductors at 3s.; 2 Conductors of the Woolpacks at 8s.; 1 Purveyor at 8s.; 1 Assistant to ditto at 3s.; 1 Wagon Master at 10s.; 1 Assistant to ditto at 4s.; 70 Drivers at 1s. 6d.; 4 Conductors of the Horses at 3s.; 1 Commissary of the Draught Horses at 8s.; 1 Assistant to ditto at 4s.; for keeping of 200 Horses at 1s. 3d. each.—(Ord. Papers, add. 5795, f. 70-80.)

Lieut.-Col. Jacob Richards kept a diary of his service with the Flanders Train under Colonel Gore, the Dutch Engineer, of which the following extracts are interesting:—

"July 2nd, 1692, Colonel Goor has orders to make ready several Scaling Ladders and Planks for 5 small Bridges for the Foot, to be in six Waggons, the 7th of Utensils, and an 8th with Granadoes . . . July 11th, Colonel Goor was ordered to furnish twelve Waggons to carry the Baggage of the Garrison at Charleroi from Brussels thither, upon which he acquainted C^t^ de Solmes that since the Dutch Train would not assist in what was ours 'twas no reason that we should in that which was merely theirs, on which 'twas countermanded. . . . July 16th, my brother (Lieut. Michael Richards, King's Engineer) was sent away to Malines to send the 4 Howitzers now come from England with Bombs and necessaries. . . . July 26th, Colonel Goor was this day with M. Tope Reynard and Flugel [probably Dutch Engineers] to make a Project and Disposition relating to a Siege. . . . August 2nd, Colonel Goor visited the Train and gave orders for mending of everything after so bad a march sending for the broken ones . . . ."

Then follows a description of the battle of Steinkirk, which took place on August 3rd:—

"We marched early this morning, and about 10 came in sight of the enemy's camp at Enghien. We found a little guard on the road which was pushed by our Foot. Our vanguard seized the entrance of the wood which covered their right, their left extending up to Enghien, the French

sending down their Dragoons to receive us till their Foot had time to come down and posting themselves in all the advantageous parts. Nevertheless our advanced body, which consisted of about 20 battalions, beat 'em from everything to their very camp, Duke Wurtemburg possessing himself of a Battery of their Cannon. But this mirth lasted not long on our side. For the enemy having the advantage of number just in that juncture sustained by M. Boufflers and ours so inferior in number were forced to give way, the English and Danish Guards suffering most, several others coming but little short. At last the firing ceased on both sides. We left four 3 pounders of the English and five of the Dutch, which being in the front could not be brought through the wood and hedges, being disabled. Our army returned to camp without the enemy's least opposing our retreat. We have lost near 4,000 men, and the enemy many more, as it generally happens to the greater mind. The English and Danes chiefly suffer in this action. All the Horse suffered by Cannon and scattering Musket shot, except the King's Horse Grenadiers and Fitzharding's Dragoons and Epingers, who pushed the French Maison into their very camp, and left their Royal Standards, which we brought off. The chief officers we lost were Lieut. General Mackay killed; Lord Mountjoy, Lord Angus, Sir Robert Douglas, Colonel Hodges, Colonel Wakupe, Lieut. Colonel Hawley, Sir Jno. Larier dangerously wounded."—(Stowe Papers, No. 384, Miscellanea.)

After returning to England, Lieut.-Col. Jacob Richards once more joined the Train in Flanders.

"April 22nd, 1693, I arrived at Rotterdam at eight in the morning, where not finding any orders either for the disposition of the stores with me or for sending back the 8 Mortars &c. from Ghent with the Train horses, I sent away a Conductor to Delf to one of the Commissaries to know what orders Colonel Gore had left with him, or where it was Colonel Gore was to be found. . . . . Friday, 15th May, according to the orders received last night I marched out our Train and encamped just on the glacis of the Citadel. The garrison joined that of Bruges and encamped in two lines, as is here described above."

Above this is a very neat little coloured drawing in Indian ink, giving a plan of the troops as encamped, and in the background a landscape view of Ghent with its fortifications and spires as seen from the camp.

"Sunday, June the 14th.—The two last days we have not foraged, so that we expect to march to-morrow, but unless the enemies make some motion I don't find how we can. I forgot to take notice that last week one of our Matrosses, one Benjamin Blackbourne, was taken within the Artillery Park by one of the powder wagons, there cutting a small slit to get some of the powder out of the barrels. He was sent to our Provost, and on the 13th, being yesterday, he was by authority of Count de Solmes tried by a Court Martial, who in consideration of his not having ever had the Articles of War read to him and his seeming not to have

had other evil intention than of getting some for to charge his pistol, he was by the said Court Martial adjudged to be publicly whipt by the hangman and burnt in the hand and to be discharged."—(Richards Papers, xii., 123.)

Sir Martin Beckman's Train did not see much active service. Its attempts on the French coast were failures, and it was then landed in Flanders after the battle of Landen. The port of debarkation was Ostend, and the force of which the Train formed part was under the command of the Duke of Leinster. It took Furnes, Dixmude, and Ghent, the capture of the latter place closing the campaign. After wintering at Ghent the Train was disbanded, and the Engineers recalled to England for other services.

At this time Engineers had no distinct army rank; there was therefore some uncertainty as to their claims in the distribution of prize money, and disputes had in consequence arisen. The matter was at length definitely settled by Royal authority under date December 16th, 1692, which decreed that the Engineers were to receive prize money at the rate of fifteen shares each. This decision apparently drew no distinction between the Chief Engineer and his subordinate officers (Add. MSS., Brit. Mus., 9326).

On April 6th, 1692, Colonel Francis Philipanneau de la Motte was appointed Chief Engineer in Ireland by Royal Warrant, with a salary of £1,000 a year. He had served as an Engineer in Ireland for the two previous years, having been commissioned with the rank of Colonel as Captain of the Company of Miners, with pay at the rate of 40s. a day. In this capacity he had done duty as an Engineer, and had even filled the post of Chief Engineer, but he was not warranted as such till the above-named date (MSS. Rolls Office, xxxi., No. 22).

In the latter end of 1692 a small Train was ordered to the West Indies. The Engineers attached to it were Captain Eleazer Menting and Captain Christian Lilly. The force was under the command of Sir Francis Wheeler, and served at Barbados, Martinique, Leeward Islands, New England, and Newfoundland.

In 1693, Colonel de la Motte was ordered from Ireland to report on the fortifications of Plymouth, Pendennis, and St. Mawes. At the same time Colonel du Cambon, who had also served in Ireland, was ordered to inspect and report on the fortifications of Portsmouth. Both these appointments were made by the King and his minister without the intervention of the Board of Ordnance. That august body was consequently much displeased, and remonstrated. The King, however, was obstinate, and the work was done. Whether Sir Martin Beckman took his cue from his masters on the Board or not, it is very certain that he cut up the reports and

proposals of these two officers most unmercifully (King's War. Ord. in Coun., &c., 1692-1695, in W. O., vol. xiv.) Colonel de la Motte was killed in the expedition against France in 1694, and Du Cambon in Flanders in 1693.

In 1693 a fresh Train was assembled for the Summer Expedition, of which Sir Martin Beckman was again placed in command. Under him the Chief Engineer was Thomas Philips, with eleven other Engineers and two Sub-Engineers. Philips died whilst serving with this Train. In the following year a similar appointment was made; indeed this seems to have been for some time an annual service, and Beckman was always placed in command. On the present occasion the Warrant appointing him distinctly states the reason:

"being satisfied of his ability and sufficiency and of his loyalty, courage, and good conduct" (Add. MSS. Brit. Mus., 9326, fol. 122-136).

By Warrant of February 1st, 1696, Lieut.-Col. Holcroft Blood was raised to the position of Second Engineer of England, thus passing over the head of Jacob Richards, who was Blood's senior. The Board of Ordnance were again much displeased, and held back the appointment as long as they dared, but were at length compelled to obey the Royal mandate.

Blood, still holding his commission as Lieut.-Col. and Second Engineer of England, was further given by the King a patent, dated October 1st, 1696, as Director and Commander-in-Chief of the King's Company of Engineers. Nothing is known of the constitution or peculiar duties of this body. They appear to have been under the direct control of the King, without the intervention of the Board of Ordnance, although some of them were on the establishment at the time. They were paid by special warrants from the Treasury. On March 31st, 1697, the list stood thus under Blood's supreme command, viz., Edward Paget, Peter Carles, John Chardeloup, Francis Petit, Oliver d'Harcourt, Lewis Petit, Thomas Burgh, John Wallace, John George Smettan, John Massey, John Clavis, Jaques Wybault, Henry Modeius, John Thomas, Joseph Bennet, William Bissett, Josias Cartwright, Josias de Champigné, Sampson de La Lo, David Bacalan, Pierre de la Bussoniere, Hector de la Ferriere, Pierre de Gually, Edmond Blood, George Low, Anthony Pagolas, and David La Tessoniere, a total of twenty-eight officers. They were not in any way graded, but their pay varied from 10s. to 5s. per day.

At the time of the Treaty of Ryswick, in 1697, the Ordnance Establishment of Engineers stood as follows:—

Chief Engineer,	Sir Martin Beckman . .	£300	per annum.
Second „	Colonel Holcroft Blood	250	„ „
Third „	Colonel Jacob Richards	150	„ „

Engineers—Talbot Edwardes, Peter Carles,
Thomas Phillips, John Bodt,
and Michael Richards . . £100 each per annum.
Extraordinary Engineer, Col. Wolfgang
William Romer, at a salary of £365 „ „

War having now ceased, the various Trains were promptly disbanded, and a number of Engineers were removed who had served through many campaigns. In their place a reduced peace Train was created by Warrant dated May 24th, 1698. Jacob Richards was appointed to command this Train, which was the first peace Train ever formed, and consequently created an augmentation to the establishment, not being temporary, as the war Trains were. The following was the Engineer branch :—

Six Engineers at £100 a year, viz., John Mauclere, George Conrade von Cassall, John Hanway, Christian Lilly, Isaac Francis Petit, and Daniel Sherrard.

Four Sub-Engineers at £50 a year, viz., Thomas Bell, Francis Hawkins, Lucas Boitout, and Benjamin Withall. The Adjutant was Albert Borgard.

This list was an addition to the nine Engineers who were on the establishment of the Ordnance, and whose names have been given. At this time the Irish establishment of three Engineers was—Chief Engineer, William Robinson; Second Engineer, Rudolph Corneille; and Third Engineer, Thomas Burgh.

In consequence of this arrangement several Engineers who were not included in these lists were recalled from foreign service and placed on half-pay. Of these we can trace Hugh Syms from Antigua, Heber Lands from the Leeward Islands, and Henry Brabant from New York. In 1699, John Bodt left the English service, and was replaced on the establishment by John Mauclere, that officer's place on the Train being filled by Capt. Lewis Petit.

The company of Engineers of which Holcroft Blood had been the Director was disbanded on March 25th, 1700, and we hear no more of it. In the June quarter of 1701 Colonel Jacob Richards died, and Christian Lilly took his place as Third Engineer of England, under Warrant of June 28th, 1701. The only other change worthy of record at this time was the reconstitution of the peace Train on February 1st, 1699, in which Albert Borgard was transferred from the adjutancy to the position of second of the six Engineers of the Train. Thus stood the position of the Engineer branch of the service at the commencement of the eighteenth century, when the short-lived peace of Ryswick was destined almost immediately to give place to the War of the Spanish Succession.

CHAPTER IV.

Gibraltar, 1704-1778.

The Beginning of the War of the Spanish Succession—Capture of Gibraltar by the British—The Prince of Hesse-Darmstadt appointed Governor—Siege by the Spaniards—Arrival of Joseph Bennet—Breaches Established—Assault Repulsed—Arrival of Talbot Edwardes with other Engineers—Conclusion of the Siege—Departure of Edwardes—Bennet made Chief Engineer—His Mission to Barbary—Treaty of Utrecht—Poverty of the Board of Ordnance—Their Correspondence—The Second Siege, in 1727—Court-Martial on Lieutenant Mullar—General Irwin on Engineer Quarters—Description of the Fortress of Gibraltar.

The eighteenth century opened with the war known as that of the Spanish Succession. An alliance was entered into on September 7th, 1701, between the Emperor of Austria, the King of Great Britain, and the States-General of Holland, the objects of which were to curb the ambition of France, at that time, under Louis XIV., the leading military power of Europe; and also to support the claims of Austria on the question of the succession to the Spanish throne.

In pursuance of the policy laid down in this alliance, Admiral Sir George Rooke sailed from Portsmouth on January 4th, 1704, with a large fleet and a considerable land force, to escort the Archduke Charles (the nominee of the Emperor for the throne of Spain) to Lisbon. Having landed his royal passenger at that port, he took on board Prince George of Hesse-Darmstadt, and sailed for Barcelona, where it had been thought the town would declare for the Austrian pretender. This, however, proved not to be the case, and, the expedition having failed in its object, Rooke returned towards the Straits of Gibraltar, having left Barcelona on June 1st.

On the 7th he encountered the French fleet, and much manœuvring took place, Rooke endeavouring to cut it off from Toulon, which was its port of destination. Having been unsuccessful in this, and fearing that the hostile fleet, being reinforced at Toulon, would be able to intercept his passage of the Straits, Rooke set sail for Lisbon.

Whilst off Lagos, on the 27th, he was joined by Sir Cloudesley Shovel with twenty-three sail of the line, his force being thus raised

to seventy-two ships and 30,000 men. Rooke was now strongly urged by Charles, as also by the English ambassador Methuen, to attempt a surprise on Cadiz; but this he steadily declined to do, and continued cruising between Lagos and Cape Spartel, apparently undecided how to act, and afraid to strike any decisive blow.

Disgusted with this enforced inactivity, Prince George at length suggested that an attempt should be made on Gibraltar, at that time a place of no great strength, and known to be but slenderly garrisoned. To this Rooke, after much deliberation, consented, and on July 31st a squadron of seventeen ships and three bomb vessels, under the command of Rear-Admiral Byng, was sent forward and anchored in the bay, Rooke following with the remainder of the fleet the next day. In the afternoon a force numbering 2,000 men, under the command of the Prince of Hesse, was landed on the sandy isthmus connecting the rock with the mainland, now known as the Neutral Ground. The fortress was by this step cut off from all communication on the land side, and left entirely to its own resources. The Governor having rejected a summons to surrender, the attack was opened at daybreak on the 23rd by a bombardment from the fleet, which lasted nearly six hours. At the expiration of that time, most of the guns bearing on the bay having been silenced, an assault was delivered on the New Mole. The springing of a mine caused a heavy loss to the stormers, but notwithstanding this they succeeded in making good their footing on the Mole, where they were soon reinforced.

Under these circumstances the Governor, Don Diego de Salinas, capitulated, and the garrison, consisting of only 150 men,* marched out with all the honours of war. Gibraltar thus passed into the possession of Great Britain, and has from that time remained one of the most valued outposts of the empire in spite of the efforts which have from time to time been made by Spain to recover its lost jewel. The Prince of Hesse was nominated Governor, and was left with a combined British and Dutch force of 2,400 men to establish himself within the fortress. He had at this time no Engineer with him, and the duty of strengthening and re-arming the fortifications, much injured by the late bombardment, fell at first exclusively on him.

"The land or north front of the rock eastward consisted of the natural obstacle afforded by a rocky precipice, and westward was formed by an artificial low level line of defence known as the Landport curtain,

* Parnell, in his "War of the Succession in Spain," says that the regular force in the garrison amounted to eighty men only, but that they were aided by militia and armed inhabitants to the number of 471.

abutting on the right against the hill and finished on the left by the North bastion, one face of which fronted the bay. This line was virtually prolonged to the left by the Old Mole, which projected into the bay and formed a battery, and to the right by a line of wall running up the hillside and forming part of an old Moorish castle. About 200 yards in advance of this wall and parallel to it was another, much weaker, resting on the right against the foot of a sheer precipice, and on the left on a round tower erected a short distance up the hill. Connecting this tower to the castle wall was a communication or trench, known as the King's lines. The Prince now constructed new batteries on the edge of the precipice overlooking the advanced wall, from which position a plunging fire could be poured into a besieger's trenches."—(Parnell, pp. 79-80).

The Spanish Government was not prepared tamely to submit to the loss of Gibraltar, and a force of 8,000 men, under the Marquis de Villadarias, was ordered to recapture the fortress. He arrived before the place on September 3rd, and was joined a month later by a French force of 4,000 men. On October 21st the besiegers opened their trenches at a distance of 800 yards from the Landport curtain, and threw up batteries, from which on the 27th they began to breach the wall as well as the Round Tower. Meanwhile, notice of what was going on had been sent to Lisbon, and Vice-Admiral Sir John Leake prepared his squadron to bring supplies and ammunition for the use of the besieged. With him the Earl of Galway sent Captain Joseph Bennet, a Queen's Engineer, to aid Prince George in conducting the defence, and he was the first officer of that branch of the service to land on the Rock on November 5th. The arrival of the squadron was most opportune. Not only did they surprise and capture in the bay three frigates and two English prizes, but they disarranged the plans which Villadarias had made to deliver a powerful night assault on the 10th. The fire from the batteries was, however, kept up with extreme vigour; the breaches which had been established in the curtain and Round Tower were daily becoming wider; whilst a third was begun in the wall, to the right of the tower, from which the approaches were only fifty yards distant.

"But every night with great energy Bennet removed from the foot of the principal (or curtain) breach all the rubbish that had accumulated and threw it up as a mask in front thus keeping the escarp itself inaccessible and raising the low counterscarp. He also constructed a strong retrenchment behind the rampart, palisaded the covered way and ditch and drove nine galleris under the glacis to a distance of 150 paces."—(Parnell, p. 85).

Many losses had by this time been sustained in the garrison, and by the beginning of December there were not more than 1,000 left

fit for duty. It would probably have been almost impossible to further maintain the defence, but for the fact that the besiegers had themselves many difficulties to contend against. The heavy rains that had set in swamped their trenches and caused much sickness. There were also many desertions amongst the Spaniards owing to the privations and hard work to which they were subjected, and the siege was in consequence carried on with less vigour.

The British Government, as soon as they learnt of the capture of Gibraltar, had prepared a Train for the service of the new acquisition, and Captain Talbot Edwardes, the Fourth Engineer of the kingdom, was appointed to its command and to take up the post of Chief Engineer at the station. He started at once before it was ready, in a convoy carrying 3,000 men to Lisbon. On arrival there, and after refitting, the force sailed for the Rock. On December 17th they encountered the French fleet off Cape Spartel, and were very nearly captured. With the exception, however, of one ship having on board 280 men which was taken into Cadiz, the convoy managed to escape, part of the ships returning to Lisbon and part making their way to Gibraltar. These latter carried 2,000 men and a good supply of stores. Being thus seasonably reinforced, the Prince assumed the offensive, and made two most successful sorties against the besiegers' advanced works, levelling their parapets, and burning their gabions and fascines. These checks, coupled with numerous casualties from sickness and desertion, made the attacking force very desponding. During the month of January, 1705, they did but little, and the garrison had a most welcome respite from either assault or bombardment.

At the end of that time Lieutenant-General De Thouy, with a reinforcement of 4,000 men, joined Villadarias, who thereupon decided upon resuming the offensive, and on February 7th, at daybreak, a powerful attack was made on the breaches. At first the attempt was successful, and the stormers established themselves within the works, but they were eventually driven back again with the loss of 300 officers and men.

On February 18th, the ships which had sought shelter from the attack of the French fleet by retiring to Lisbon made their appearance in the bay, having on board 700 men, and with them the Engineers Talbot Edwardes, Lewis Petit, and John Massey, the former of whom took over the command from Bennet. Writing to the Board of Ordnance two days afterwards, Edwardes says:—

"Day and night they throw bombs and shot into the town, which has laid great part of it in rubbish. The houses near the enemy look like a place where some great fire has been, but the Fortification towards the land is most dreadfully torn, which indeed cannot be wondered at since

it is now above seventeen weeks the siege began, and in that time it is computed there has been 8000 bombs thrown in and above 70,000 shot, which not long since had dismounted all the cannon. But by the unwearied pains of the good Prince here (who is continually upon the Fortifications and often will work himself) some are mounted again and the rest are in hand."

On March 2nd, Bennet completed a nine-gun battery which had been for some time in hand, and the Prince celebrated the event by giving fifty gallons of punch to the working parties. He himself drank the Queen's health, and named the structure the Queen's Battery. The active prosecution of the siege was from this time at an end. Throughout the month of March rain fell almost incessantly, and the besiegers were fully employed in the effort to keep their trenches from being inundated. Early in April they began to remove their guns from the batteries and to convert the siege into a blockade, and on the 20th they retired from before the place.

Of the 18,000 men who from first to last had been engaged in the attack, only 6,000 were left, showing a loss from wounds, sickness, and desertion of no less than 12,000. On the side of the garrison the casualties were about 1,500.

Next to the Prince, who was the soul of the defence, Joseph Bennet seems to have been the man whose engineering talents, energy, and devotion, were of the highest value to the garrison. In a letter to the Earl of Galway, Darmstadt wrote on April 5th, 1705—

"C'est à lui que l'on doit que Sir Jean Leake n'aye pas esté confondu des importunités de vos officiers qui voulurent le persuader de m'obliger à rendre la Place la premiére fois qu'il vint ici à cause qu'ils (ne) crurent pas la Place tenable. Monsieur Laurence estoit le chef qui forma le papier seditieux et c'est lui Mr. Bennet tout seul qui opposa a cela . . . ainsi que ce dit Bennet mérite bien que S. M. Britannique considère ses bons services."

In consequence of his devotion and of the Prince's recommendation, Bennet was made a lieutenant-colonel, and received from the Queen a gratuity of £200. We also find in an Ordnance Minute, dated May 31st, 1705—

"That a letter be writ to Captain Bennet to acquaint him that the Board are sensible of his great services at Gibraltar, and doubt not but the Duke of Marlborough will consider them."

The Train of which Edwardes was appointed the Chief reached Gibraltar in 1705, after the termination of the siege, and proved most useful in the restorations that were being carried on. The *personnel* consisted of the Chief Engineer, Captain Talbot Edwardes, with a daily pay of £1; 1 Storekeeper at 8s.; Clerk to ditto,

4s. 6d.; and a Gun and Mortar Detachment of 2 Fireworkers at 4s.; 6 Bombardiers at 2s.; and 55 Gunners at 1s. 6d. The Artificers were a Master Smith at 4s., with 2 Mates at 3s.; a Master Carpenter at 4s., with 2 Mates at 3s.; a Master Bricklayer at 4s., with 2 Mates at 3s.; a Master Mason at 4s., with 2 Mates at 3s.; 2 Sawyers at 3s. 6d. and 3s.; a Wheelwright at 3s.; a Cooper at 4s.; and a Turner at 4s.*

There was plenty of work for this body of artificers, and doubtless they formed only the nucleus of a much larger number locally engaged for the fortifications. They must be considered the forerunners of the Corps of Military Artificers created at Gibraltar seventy years later.

Talbot Edwardes did not remain long at the Rock, and after his departure Bennet succeeded him as Chief Engineer. For the next four years he was busily engaged in restoring the damaged fortifications, and creating a more powerful system of defence. In the year 1710 he was sent on a mission to Barbary, to arrange for the purchase and supply of building materials from the Emperor of Morocco. He was the bearer of the following letter from Queen Anne to the Emperor:—

"Anne by the Grace of God Queen of Great Britain France and Ireland Defender of the Faith &c.

"To the High and Glorious Monarch the Mighty and R^t^ Noble Prince Albunazar Muley Ishmael Ben Muley Sheriff Ben Muley Aly Emperour of the Kingdom of Fez, Morocco, Taffilet, Lus, and all the Algarbe and its Territorys in Africa, Greeting. High & Glorious Monarch.

"Our Governour of Gibraltar having represented to Us that the Houses there are in a ruinous Condicõn for want of several Materialls which cannot conveniently be brought from hence by reason of the great distance, and that those parts of your Imperial Maj^ties^ Dominions w^ch^ lye nearest to it are abundantly supply'd w^th^ all those things the Inhabitants of the said Town have occasion for, We out of our Tender care for all our Subjects, tho' never so remote, and in full confidence of your Imperial Majesty's friendship which We have so often experienced and w^th^ great pleasure aeknowledge, do make it our request to you That you will grant leave to Coll^o^ Bennet or to such of our officers as shall be sent from thence, to treat w^th^ the officers of y^r^ Imperial Majesty to cut down Timber, and make Bricks, Tile, or Lyme about the Coast of Alcazer, near the Streight's Mouth, w^th^ free liberty to Transport y^e^ same for the use of the said Garrison. We on our part shall embrace all opportunitys To shew our Esteem for y^r^ Imperial Maj^ty^ and our Royal favour to y^r^ Subjects, so w^th^ wishes of health and true happiness We recoñend y^u^ to the protection of Almighty God. Given

* Richards' Papers, xxiv. 135.

att our Court att our Royal Palace of Kensington This 17th day of July 1710 in the Ninth year of our Reign.

"Your Imperiall Majtys most Affectionate Friend "ANNE R."

(War Ord. in Coun., in W. O., vol. xix., p. 144.)

The Emperor, in his reply to Bennet, as the envoy of the Queen, expressed his willingness to comply with Her Majesty's request, but coupled his consent with so many conditions that no practical benefit ever ensued from the negotiation. (See *ibid.*, p. 285, for Emperor's reply.)

Bennet's zeal in his work at the Rock was such that, judging from a letter written by him to the Lord High Treasurer, dated August 15th, 1711, he seems to have been accused of spending too much money, and had to defend himself from the aspersion. "Little money," he says, "has been laid out in fortifying Gibraltar considering the work that has been done. The place is now very strong. . . . I was frequently in want of coals. . . . I shall shortly finish the fortifications. . . ." His work was eminently successful. The allies did not venture to renew the attack, and in the year 1713 the Treaty of Utrecht ratified the possession of the fortress by Great Britain in its 10th Article, in which it is thus recorded:—

"The Catholic King does hereby for himself, his Heirs and Successors, yield to the Crown of Great Britain the full and entire Propriety of the Town and Castle of Gibraltar, together with the Port, Fortifications and Forts thereunto belonging, and he gives up the said Propriety to be held and enjoy'd absolutely with all Manner of Right for ever without any Exception or Impediment whatsoever."

There are ample proofs in the Ordnance Minutes of the great want of money under which that department suffered, a want which compelled a niggardly outlay even for the most important objects. We have seen that Bennet had to defend himself against extravagance in the expenditure necessary to restore the fortress to a decent state of defence—a matter which brooked no delay, since the place had been liable to attack at any favourable moment until the Peace of Utrecht ratified its possession by England. It was, however, not only the money for such services as these that was procured with difficulty and by dribblets, but even the very pay and allowances of the officers of the Ordnance were often sadly in arrears. Thus, we find under date August 24th, 1714—

"That Colonel Bennet's Account for his personal pay as Engineer at Gibraltar be stated and that a Bill be allowed and debenture made out to him for what shall be due to the time of his discharge." (This alludes to his retirement in 1714.)

Probably this led to some dispute as to the items, for the next entry is September 28th, 1714:—

"That Colonel Bennet attend here on this day se'nnight in relation to his pay."

Even when the amount was settled it seems that the Board was compelled to give a debenture instead of cash, for on April 5th, 1715, we read the following entry, the Board having presumably secured funds in the interim, owing to the new financial year being entered on :—

"And to pay Colonel Bennet £1356 in full of a Debenture dated the 26th January, for his pay as Engineer at Gibraltar."

There were still items unsettled, as we read further on, June 3rd, 1715, "Colonel Bennet allowed £164 for the enemy's shot gathered by him at his own expense at Gibraltar" (presumably after the siege of 1704-5).

We also read that one of his successors in the command, Major John Hanway, was treated in a similar manner :—

"Dec^{r}. 14th, 1716. Major Hanway at Gibraltar, as Chief Engineer there, to be paid his arrears to Dec^{r}. 31st 1715, and his subsistence from May 6th to December 14th 1716 at 15s. per diem."

Bennet was succeeded as Chief Engineer by Brigadier-General Sir Peter Durand, from Minorca, in 1712. That officer, during the three years he held the post, did a great deal in the restoration and development of the fortifications, as far as the economical disposition of the Board of Ordnance would permit. He died at Gibraltar in December, 1715, and was buried in the King's Chapel. The inscription on his monument runs thus :—

H. S. E. (Hic Sepultus est)
Petrus Durand Armiger
Architecturæ Militaris
Et rei tormentariæ Britannicæ
In hac Urbe et Minore Baleari
Præfectus
Tanta peritiæ dederat specimina
Ut ab augustissimo Rege Georgio
His munitionibus perficiendis
Unus destinaretur
Magna molientem mors abstulit
Commilitonibus
Defensorem Egregie desiderandum suis
Amicum Patrem Maritum Eheu quam flebilem
Obiit Dec^{r}. MDCCXV.
Æ Suæ XLII.*

* Here is buried Peter Durand, Knight, Chief of Military Works and British Warlike Engineering in this city and Minorca. He gave so many proofs of his

The garrison of Gibraltar had on its strength a Company of Artillery under Captain Christopher Briscoe. The minutes of the Board concerning this Company show that it was under the orders and command of the Chief Engineer.

"Sep^{r}. 26th, 1705. A letter to be writ to Colonel Bennet at Gibraltar to discharge Gunner Battiscombe there on account of lameness.

"June 21st, 1717. His Majesty's Principal Secretary of State having (near a year since) signified the Prince of Wales's pleasure to the Lieut. Governor of Gibraltar upon a complaint made against Capt. Christopher Briscoe for breaking the arm and putting out the eye of William Hughes, a Bombard^{r} belonging to the Trayne of Artillery under his command, at that place, that a Court Martial should be held upon the said Capt^{n} to try this affair, We strictly require and direct you to inquire into ye reasons that have obstructed the proceeding thereupon according to His Royal Highnesses directions, since we are informed nothing (as yet) is done thereon, and make your Report thereof

"To Your Affectionate ffriends

"Tho. Erle, A. Richard, Tho. Frankkland."

Addressed "For Mr Moore Engineer for the Office of H. M. Ordnance at Gibraltar."

(Acting as Chief Engineer in the absence of Major Hanway).

It is evident either that Captain Briscoe cleared himself of the charge, or that in those days the breaking of an arm and the putting out the eye of a soldier by his captain were considered venial offences, for in an entry dated November 20th, 1720, we read—

"Mr. Jonas Moore, Engineer, to command the Artillery and to be Chief Engineer at Gibraltar, and a letter to be written to Capt. Briscoe to obey the said Mr. Moore as Commander-in-Chief."

Major John Hanway succeeded Sir Peter Durand as Chief Engineer in 1716, and he in his turn was relieved by Captain Horneck in 1718. A somewhat amusing letter, addressed to the latter, is gravely placed amongst the records of the Board's correspondence:—

"London, 31st March, 1720.

"Dear Sir,—You have lived luxurious so long in your Denn that the Board do not think it proper or advisable to sett you at liberty till they hear what effect the Lent will produce, and whether you can be spared; in the meantime Mr. Moore will send you all the news of the Town, which you may amuse yourself with for these 3 months, if you (like Col. Borgard) read them all carefully over from top to bottom.

---

skill that he was the one appointed by his most gracious Majesty King George to perfect these fortifications. Death, however, took him away whilst making great improvements—a defender, deeply regretted by his fellow-soldiers. A friend, father, husband, alas! how much bewailed! He died December, 1715, aged forty-two years.

Tho now there is nothing stirring but Mississipi and South Sea, and happy were they who had money to put in at first. Amongst those of good fortune our Surveyor" (the Engineer Brigadier-General Michael Richards) "and Benefactor has gott £26000 to pay for an Estate of £1000 a year (w^hch he is the best Bidder for) & reserved in the Stock as much as he had at first. I wish he had better health to enjoy it, though he is now pretty brisk, advancing May Hill apace. I am just going with Daddy Meades to wake the evening & to talk of this great Bubble w^hch he has gott £2000 by. He gives his Blessing to you, as I do my humble service and hearty wishes for your health & welfare.

D^r S^r Your most faithful humble serv^t

"Bell Jones."

"To W^m Horneck Esq^re at Gibraltar."

Mr. Jonas Moore was named to the command at Gibraltar on July 22nd, 1720, it being intended that Captain Horneck should proceed to Mahon to take up the command there. An alarm of a new attack on Gibraltar appears, however, to have detained him, as we read in a letter dated November 18th, 1720—

"By our letter of 9th September to Capt. Horneck he was directed not to go to Mahon till further orders, but as the apprehensions of attacking Gibraltar are now over he is again ordered to proceed. You are therefore to take upon you the chief Command and Direction as well of the Artillery & Stores as of the Works at Gibraltar, for which a Commission will be sent you, and in the mean time orders are now gone to the Respective Officers there to obey you as their Commander in Chief.

"To Mr. Jonas Moore Engineer to the Office of Ordnance at Gibraltar."

On October 24th, 1721, a letter was addressed to "Jonas Moore, Esq^re Engineer and Command^r in Chief of the Traine of Artillery at Gibraltar." There appears to have been some dispute as to the position of the Company of Gunners, in regard to medical treatment, as in this letter it is said—

"As to the 2 Bombardiers blown up by the springing of mines the Surgeon of the Garrison is to Cure them upon the same terms with y^e rest of the Garrison."

It would seem that during this time Jonas Moore, although Commander-in-Chief of "the Trayne of Artillery," and in charge of the works, was not officially recognized by the title of Chief Engineer, for in a letter dated December 22nd, 1722, the Board wrote—

"The R^t Hon^ble the Earl of Cadogan" (the Master-General of the Ordnance) "hath been pleased (upon y^e Board's Recomendacõn) to grant you a Warr^t to be Chief Engineer and Sub Director of y^e Works at Gibraltar, at y^e allowance on the New Establishment of Engineers at 15^s/ per Diem."

On January 2nd, 1727, the Board wrote as follows to Moore:—

"The last of December We sent you Orders to Erect, without loss of Time, Cover'd Batteries Bomb proof in the Kings and Princes Lines, retaining Walls to prevent the Enemys Bombs rowling down into those Lines, and such other Works as you shall find necessary for the better Defence of that place. As also to put the Mines in the Glacis of North Gate into the best condition they are capable of, they being what was the greatest Terrour to the enemy during the last Siege. All which we desire you will punctually Execute with the utmost Exactness, Frugality and Dispatch. And the better to inable you thereto, altho We have yet no money allow'd Us for the Works at Gibraltar, We shall answer any Bills the Storekeeper by your direction shall draw upon Us, not exceeding Two Thousand pounds Sterling . . . There are two large Caves, one in the Princes Line and the other in the Kings Line, We wou'd have you to consider if those Caves can be of any use to cover the Men (in case of a Siege) from Bombs or Stones, that if you find them capable of such use you may make them Commodious for that Service, either by enlarging and making Benches or other Conveniencys in them as you shall find most proper. Besides a Large Supply of Stores which We hope will arrive with this Letter or very soon after it, We send over two Engineers to be Assisting to you viz. Cap^{t} Selioke and M^{r} Wibault, and a Reinforcement of 30 Gunners &c. Dont fail to let Us have an acco^{t} of all Transactions by every Opportunity that offers.

"We are

"Your Loving Friends

"CHA. WELLS, JOHN ARMSTRONG, GEO. GREGORY, L. SMELT.

"To Jonas Moore Esq^{re}"

And again, on January 21st, 1727, Moore is informed—

"By this pacquet you will have Directions about the Works and Authority to lay out £2000 in putting Gibraltar into a posture of Defence, that all the boasted power of Spain may not be able to prevail against it. We are in no pain for you here."

These letters show that the Board had some inkling of the coming storm, though they were not prepared to make any extravagant outlay for a fortress which they seemed to consider safe. It was very well for them to be "in no pain" for the garrison of Gibraltar, but within three weeks of the time when this letter was penned the Condé de las Torres had opened his trenches against the place with an army of 20,000 men, in fulfilment of a treaty entered into between Philip V. of Spain and the Emperor Charles VI. One of the secret clauses of this alliance was that the Spaniards were to be supported in the endeavour to recover their lost stronghold. The Earl of Portmore, the Governor of Gibraltar, was at the time in England; the command consequently devolved on Colonel Clayton as Lieutenant-Governor. As soon as

the news of the siege reached England, reinforcements were sent out, and Lord Portmore, although a very old man, hastened to return to his seat of government, arriving there in the month of April. The Engineers present at the siege were—Sub-Director, Jonas Moore, the Chief Engineer of Gibraltar; Engineer, Captain John Selioke; Sub-Engineer, William Skinner; Practitioners, Peter Laprimaudaye, Robert Bousfield, and James Wybault; and Cadet Engineer, Justly Watson. The siege was not prosecuted with any great energy, the Condé trusting to the effects of bombardment to gain his point. After five months of open trenches a general peace put an end to the attempt.

The Board kept up their correspondence with the Chief Engineer during the siege. On March 10th they wrote—

"We direct you to send us by the very first opportunity a Sketch of that part of the Town of Gibraltar that's attacked, & of the Enemys approaches and Batterys, distinguishing by proper References the Number of Cannon & Mortars upon Each Battery And by every succeeding opportunity to send us an exact Journal of the Approach of the Enemys Works during the Course of the Siege."

Captain Moore seems to have upheld the reputation of the Corps at the siege, if we may judge from the following letter:—

"Dear Sir,—Inclosed is a Lre w^{ch} Mr. Cockburn tells me is wrote by the Ma. General Orders to acquaint you that his Grace approves very well of your Conduct, and you may depend upon my taking the first favourable opportunity to lay your Extra Services before their honours, who I believe are much inclined to Reward all their Officers that behav'd well at Gibraltar, and if so your share will not be the least."

Captain Moore's pay was raised to 20s. per diem, and in the letter announcing this fact the writer says—

"I am of opinion you will share with the other Officers in the Board's favour about the perquisite of the Shott & Shells."

In another letter, dated September 13th, allusion is made to two other Engineers at the siege—

"Pray in your next let me know how Capt. Selioke & Mr. Wybault behaved. The former had his salary of £100 p. ann. made up to 10^{s}/ a day as an Encouragement, but the latter had nothing but his Pay of 3^{s}/ a day."

Wybault was a Sub-Engineer at the time, and the practice seemed then, as now, to exclude subalterns from reward.

In spite of the lavish expenditure of £2,000, which the authorities thought would render Gibraltar secure from "all the boasted power of Spain," new works were apparently considered necessary; and we here get a glimpse of the grandmotherly legislation of the Board, who seemed to look upon their officers as

incapable of carrying out even the details of the works without warnings and advice:—

May 15th, 1729.—"As you are far advanced in the Covert way and Glacis, We give you one Caution, which is that you take care that the Sailliant Angles be carried up so high as to defend the Curtains & Batteries from the Enemies line of Fire as well as the Strait Line which run parrallel to the Counterscarp."

Again, on August 25th, 1730—

"We putt you in mind that after you have laid the foundations of the whole you carry it up altogether, that we may have no Cracks or Settlements in it by being carried up at different times & seasons."

In a letter dated February 26th, 1734, after having given the most detailed instructions as to the mode in which work should be carried on, it is added—

"Thus We give You our Opinion, and desire you to do all to the best advantage and in the frugallest manner you can for the King's service, not being able to make more Critical judgments at so great a distance."

Later on, when the post of Chief Engineer was filled by Major (afterwards Sir William) Green we seem to see something like a revolt against these minutiæ. The following extract of a letter from him to the Board must have been written sarcastically:—

"Your obliging caution of leaving vents for the water Issuing from the springs in the Hill at the Back of the Wall shall be punctually attended to. I must beg to acknowledge with a great many thanks the trouble you have taken in describing the Nature and Manner of Repairing the Road to Willis's."

The Board of Ordnance was certainly never behindhand in upholding the rights and privileges of the officers who were serving under its control, but it was over-fond of asserting its paternal rights and of keeping its officers in leading-strings, whilst to all other departments of the army it was most obstructive and obnoxious; and of this we get some samples in the Gibraltar records.

There had been much unpleasantness owing to the fact that the Governor considered his authority sufficient for ordinary trivial items of expenditure, a presumption which the august Board could not tolerate. They soon made matters so unpleasant for the unfortunate Chief Engineer that he was compelled to inform the Governor of the necessity for procuring the sanction of the Board for everything. Some amusing entries have been made on this matter:—

"Jan^{y} 8th 1731. Lieutenant General Sabine having by letter to His Grace the Master General dated 14th Nov^{r} requested that some

Orders might be given concerning the prisons at Gibraltar, which are in so bad a condition that they are not fitt for Dogkennels, that they suffer very much in their health by the filth and nastiness of the place occasioned by the want of necessary houses for the Soldiers to go to, which if they were built of Stone would last for ever, and for ought he knows be cheaper to the King than those of wood, which in spight of all the care that can be taken the Soldiers will tear up and destroy, &c."

The Board on this ordered the Chief Engineer to carry out the necessary improvements.

In a letter of December 12th, 1738, to Mr. Skinner, Acting Chief Engineer, we read—

"Having signified in your letter of the 12th Oct^r^ that you are acquainted with our having approved of your Obeying the Governor's orders in repairing the Parapets & Banquetts, as necessary to the Defence of the Garrison, but desire to know whether you are to build the Stone Pillows of a Gallows which is in the latter part of his Order, he has several times insisted on your doing so, but you have hitherto put it off. In return thereto we desire, when the Governor insists on it again, that you will let him know that as the Building of a Gallows is not necessary for the Defence of the Garrison we think it may be postponed."

In reply to an appeal from the Chief Engineer for more officers, "as a siege by the Spaniards is expected," Captain Archer and Captain-Lieutenant Mullar arrived in June, 1762, in the *Blenheim*, with the new Governor, Lieutenant-General Cornwallis. Lieutenant Mullar was not long in getting himself into serious disgrace, as Major Green reports on September 3rd, of the same year—

"I am to acquaint Your Honours that Lieut. Mullar, Engineer, has been tryed by a General Court Martial for going in Company with Another Officer into the Spanish Advanced Hutts contrary to orders, and firing a Pistol at one of the Miquelet "(Militia)" Guards placed there by the Spaniards to prevent Smugling, the Ball of which went into the Man's mouth which rendered his life doubtfull for some time, and when that was declared out of danger they were then tryed, and the sentence is imagined to be gone home for His Majesty's Pleasure, but from the Circumstances that attended this rash action it is more than probable they will be broke, in which Case I hope Your Honours will send such Engineers as will appear most proper, begging leave to assure you that the Assistance of some is still much wanted."

The sentence, which was promulgated on May 29th, 1763, was "The Dismission of Capt. Lieut. Mullar from His Majesty's Service."

We now come to a question which has been a grievance and a matter of dispute for many years, and that is the occupation by Engineers of selected quarters appropriated specially for their use. It is amusing to trace the first mutterings of that storm which

reached its height when the Control Department, then newly formed, endeavoured to wrest the privilege from them.

Major-General Irwin, who naturally was opposed to the claims of the Ordnance officers, had issued an order that—

"All King's Quarters for Officers as well as those Occupied by Officers of the Royal Regiment of Artillery, and those Occupied by other Regiments & by the Engineers to have a Stone put on them with following Letters Engraved, viz^{t}., Officers Quarters & to be Numbered begining with N^{o} 1 and proceeding in a Regular Manner."

The object of this order was very apparent, and Major Green wrote as follows:—

"Its with pleasure I embrace every Opportunity of Assuring you with what Chearfulness I shall Obey Your Commands. Yet at the same Time know it's a duty Incumbent on me, and what the Master General and Hon^{ble} Board Expect, that I shall represent to You that the Officers Quarters are Already all Number'd, and that the other Quarters ment^{d} in the above Order have, ever since the first Regulation of Quarters in this Garrison, been look'd upon as Establish'd Ordnance Quart^{rs} and Confirmed as such by General Bland, and all Repairs or disbursements made on them are by the Board's Absolute Commands placed under that Head; therefore as the Expence of Numbering Ordnance Quart^{rs} is unprecedented and no Allowance made for that Purpose by the Hon^{ble} Board, am under the necessity of praying Your Warrant for my Justification, and more particularly so as such a step must Hereafter tend to Alienate those Quarters from the Service of the Ordnance."

The reply of General Irwin was certainly very cogent and crushing, and in spite of its length is given *in extenso*, as it seems to illustrate the question thoroughly from the military point of view:—

"Gibraltar, 14th Oct^{r} 1765 Sir—I received your letter of the 10th inst." (the General had evidently carefully thought over his reply before he wrote it) "which I look upon as a Representation against my Public Orders of that date, and I cannot But say that tho' it may be proper in your Quality of Engineer, yet you are an Officer of too much Experience to be Ignorant that it is not very military to make Objections to public Orders before Complying with them, as I have always Understood the Maxim was to Obey first and Complain Afterwards; however, out of my Personal Regard for you, as well as out of the Respect I bear to the Individuals who Compose the Board of Ordnance, I am willing to Enter a little into the Reasons why I gave those Orders, as also to Endeavour to show You how Illfounded the Objections you Offer are.

"I had directed all the Inhabitants houses to be Number'd, and as all the Officers Quarters except two are Already Number'd, I design'd by giving out the Order that those two should be likewise Number'd for the sake of Uniformity.

"You are pleased to say in your Letter that the Officers Quarters are already number'd, and that the other Quarters mentioned in the order have ever since the first regulation of Quarters in this Garrison been look'd upon as Establish'd Ordnance Quarters, and Confirm'd as such by General Bland. I know not how such establishment prevails, nor when or in what Manner General Bland confirm'd it, and have never seen or heard any thing of the one or the other except by Your Letter, but I am Credibly Inform'd that such a Regulation if ever made has not been constantly Observ'd, and particularly that the Quarter which You at present Inhabit has been Occupied by different Officers of Regiments of Foot. As to the Ordnance Quarters properly so called, which I look upon to be the Storekeepers and those of the Civil Officers and Clerks in that department, I think it highly proper that they should be permanently Establish'd for the Convenience of carrying on the Public Business. But I do not see that any particular Corps of Military Officers (and such I presume Engineers deem themselves) can with any degree of Reason or propriety claim a pre-eminence or preferance in their portion or Allotment of Quarters in this Garrison, and by that Means apropriate a Certain Number of the best Quarters in such a manner as to put it out of the power of the Governor or Commander in Chief to make any use of them in the most Critical emergency. I shall ever be of Opinion that the Engineers on service in this Garrison should be as Conveniently and as Comfortably lodged as time and circumstances will admit of, but I can never think it consistant with Discipline and the Public Service that they should have a perpetual Right without Controul to the Best or Indeed any particular Quarters in the Place. Should it be thought Necessary, either in Time of Peace or War, to augment the Garrison and to order Hither one or more General Officers of Ranks superior to the Engineers, it would Certainly be very Unmilitary, and I may say very Indecent, that an Engineer with the rank of Captain or whatever other Rank he might Happen to Bear should enjoy one of the Best Quarters, and the Generals or other his Superior Officers be Obliged to take up with the Worst. Or should the Governor on any Occasion think it necessary or Conducive to the Better defence of the Place, that an Engineer should be Stationed at or near the South Barracks, in order to be the more ready to give their Advice and Assistance in case of any sudden attack on that side, surely no Engineer would say that his Establish'd Quarter was in the Town and that therefore he could not remove.

"These reasons will, I hope, be Quite Sufficient to show the Impropriety of having any Particular Quarters establish'd for the use of a peculiar Corps of Officers in this Garrison, and though, as I said before, I have all possible respect for the Individuals who compose the Board of Ordnance, yet I will take the Liberty of saying that they cannot at so great a distance be so Good Judges of the Manner or place most proper and Convenient for Quartering Officers (as well Engineers as others) as the Governor or Commander in Chief. I therefore abide by my order of having all Officers Quarters mark'd and Number'd, and must expect your prompt Compliance therewith, especially as the Quarter you possess and

that at present Occupied by Capt. Digby are the only two remaining unnumber'd.

"I can hardly think you serious in requiring me to give you a Warrant as a Voucher or Justification for the Expence which the Execution of my orders might Occasion, and which I understand may amount to a Shilling or Eighteen Pence, but if you have really any Scruple on that Account I will deposite in any hands you please the full sum which you think this great work may amount to as a Security for your Indemnification, in Case the Board of Ordnance shall disallow your charge, but I cannot help Observing that when you proposed to me to mark what you call the Engineers Houses as Ordnance Quarters instead of Officers Quarters, you appear'd very ready to do it on my bare Verbal Consent, without any Warrant, tho' I suppose the Expense in that way would have been as much as in that which I have order'd.

"In the Course of our Conversation on this Subject I have Already told you, and take this Opportunity of repeating to you, that I have not any Intention of removing you out of your present Quarter unless there should be a Necessity for so doing, arrising from some such Circumstance as I have mentioned.

"I am Sir

"Your most Humble Servant

"J. Irwin."

The immediate result of this correspondence is not recorded, but in this, as in all the other cases when the Engineers were attacked, they succeeded in retaining their privileges in the matter of special quarters.

It would seem that the Engineer Office at this time was very poorly provided with instruments, since Major Green, after taking over the command from Major Patoun, writes to the Board on December 15th, 1760—

"I beg to acquaint your Honours that I was in hopes to find some Instruments for Surveying here, but Major Patoun never had any from the Office, and tho' we never may want Instruments to Survey any new Acquisition of Territory in this Part of the World, and the Drawing room in the Tower I know is replete with Plans of Gibraltar, yet I hope your honours will think that in a Fortress of this Consequence the Engineers should be possessed of such Instruments as should, by the order of a Governor or Commanding Officer, upon any Occasion of Importance or usefull Curiosity, enable them to take an Angle, Height, or Distance, and those I have of my own are really wore out in the Service of the last and the Present Warr, therefore hope your Honours will please to Indulge us with a plain table with proper Chains, three leg'd Staff and all Compleat, as likewise a Theodolite compleat (which if strong and well made) will do."

During all these years works had been from time to time carried on with a view to rendering the fortress still more impregnable than it had been made by nature, and from the time that General

EUROPA
WINDMILL
HILL

Eliott became Governor they were pushed forward under Green with increased vigour.

In 1777, having received a warning from the British Government to exercise the utmost vigilance, Eliott determined to send his Chief Engineer in person to England to confer with Lord Townshend on the subject of the defences. Green took with him the following letter from the Governor:—

"My Lord. Gibraltar Oct^{r} 5th 1777.

"Colonel Green will have the honour to deliver this letter to your Lordship, the only officer who is, or indeed ought to be, in a condition to lay before you the exact state of our works, and the most minute peculiarities of this singular fortress circumstanced in so many respects different, I believe, from any other in the known world. Col. Green, from close and repeated examination, is perfect master of the advantages to be taken from any recess or protuberance of this mountain, either horizontal or vertical, which grow daily more obvious, having become accessible to us by the communications made and making towards such points of the rock as may contribute to strengthen our defence. Your Lordship will find, by Col. Green's report, that the King's Bastion is now in such a state that should a sudden and unforeseen emergency require it, with a few days' notice we might be able to place our artillery on temporary platforms, the Chief Engineer thinking the rampart not yet sufficiently settled to receive those of stone which are to remain. This noble work being now so far advanced, I think it now the most favourable opportunity for Col. Green to take your further orders in the prosecution of such plans as have been or may be adopted to complete our fortifications. This will be a tedious, expensive, but necessary work for maintaining the fortress, and added to it must be many internal accommodations in barracks, bombproofs, storehouses, hospitals, magazines, with all of which this place I do assure your Lordship is so very indifferently provided that the wants in most of these articles are by no means supplied proportionately to our present garrison. I submit it therefore what must be our situation in case of service when our force must be at least tripled.

"I have, &c.,

(Sayers, "Gib.," 1862, pp. 275-277.) "G. A. Eliott.

Before entering on an account of the celebrated siege, which forms one of the most striking events of the eighteenth century, it may be well to give a brief description of the works which enabled Eliott and Green to baffle all the efforts of France and Spain for a period of nearly four years.

The promontory of Gibraltar, which in parts attains an elevation of 1,300 feet, is connected with the mainland by a low neck of sand. The breadth of this isthmus, at the point where it joins the rock, does not exceed 900 yards, but it increases rapidly in width as it recedes. The rock runs nearly due north and south,

the northern part facing the isthmus, and is divided longitudinally by a central ridge or backbone. The eastern side facing the Mediterranean is precipitous, as also is the north front; but the western side falls gradually to the water. At the foot of this slope which faces the bay the town is built, the communication to it from the isthmus being by a causeway which served as a dam to an inundation. This road was well flanked by works named respectively the King's, Queen's, and Prince's Lines. These had been cut in the rock with immense labour, and scarped so as to be quite secure from assault. The causeway was further directly defended by a front of two bastions and curtain, forming the Grand Battery, which had a ditch and covert way, the glacis being well mined. Above the lines were a series of batteries at different levels, collectively called Willis's.

The defences on the side of the bay commenced near the Old Mole. In this line there were one large and three small bastions, which, taken in their order, starting from the Grand Battery, were called Montague, Prince of Orange, King's, and South Bastions. The most important of these is King's, which commands the whole bay, and flanks the line from Old to New Mole Head. At this time it mounted twelve thirty-two-pounders and four ten-inch howitzers in the faces, and ten guns and howitzers of smaller calibre in the flanks; it had casemate accommodation for 800 men. Montague, which had also casemates for 200 men, was in connection with the Old Mole. From South Bastion a line ran at right angles up the face of the hill, enclosing the town and terminating at the foot of a precipice.

The remainder of the promontory from South Bastion to Europa Point was protected by works in all places which had not been rendered inaccessible by nature. In the rear of Europa Point the dominant elevation of Windmill Hill was enclosed in lines, which, having great command and being within musket shot of the water, were very formidable. Many of these works, including the bastions on the west front, were designed and executed under the superintendence of Colonel Green, who had been the Chief Engineer since 1760. The foundation-stone of King's Bastion was laid in 1773 by Major-General Boyd, then acting as Governor in the absence of General Cornwallis. In this ceremony he was attended by Colonel Green and all the principal officers of the garrison. After declaring the stone duly laid, "This," he said, "is the first stone of a work which I name the King's Bastion. May it be as gallantly defended as I know it will be ably executed, and may I live to see it resist the united efforts of France and Spain,"—a prophecy and an aspiration which were fulfilled within a very few years.

The garrison at the commencement of the siege consisted of six companies of Artillery, the Soldier Artificer Company officered by Engineers, the 12th, 39th, 56th, 58th, and 72nd Regiments of the line, and three regiments of Hanoverian troops, making a total of 268 officers and 5,114 men. The naval force under Admiral Duff consisted of the *Panther* flagship of sixty guns, three frigates, and a sloop of war.

In the early days of the British occupation the Spaniards had constructed a line of works across the isthmus, at the distance of about a mile from the north front. This line, which was about 1,700 yards in length, reached from shore to shore. At either extremity was a masonry fort, each mounting upwards of twenty guns; the one overlooking the bay was called St. Philip's, and the other St. Barbara. These forts furnished a powerful cross-fire over the Neutral Ground, which lay between the line and the north front of the fortress.

At the time of the construction of these works much acrimonious discussion took place on the subject in England. By many it was thought that the surrender of Gibraltar would have precluded the Spaniards from erecting any works within two cannon shot distance of the fortress. It was, however, pointed out that the clause in the Treaty of Utrecht yielding the fortress specially restricted the grant to the town and castle of Gibraltar with its port and fortifications. As a matter of fact our Ministers had demanded an extent of ground of two cannon shot from the north front, but the French King, who acted as intermediary in the matter, said that "he could not prevail with the King of Spain to part with one inch of land more than the town itself," and the clause in the Treaty was worded accordingly.

CHAPTER V.

The Siege of Gibraltar, 1779-1783.

Commencement of the Siege of Gibraltar—Mrs. Green's Journal—Holloway's Diary—Drinkwater's Narrative—Engineers Present—Green's Lodge—Construction of Besiegers' Batteries—Admiral Duff—Experiments with Shell Guns and Light-Balls—The First Relief under Rodney—Small-Pox—Fire-Ships—Advanced Batteries constructed by the Spaniards—Lieutenant Booth—His Plans—His Subsequent Illness—Second Relief under Admiral Darby—Bombardment of the Town—Execution of two R.M. Artificers for Plundering—The Sortie—Great Damage to the Besiegers' Works—The Ten Great Floating Batteries—Galleries formed in the Rock—Second Bombardment—Attack by the Floating Batteries—Their Destruction—Conclusion of the Siege—Rewards to the Principal Officers—Cost of the Defence.

The year 1779 opened with much uneasiness at Gibraltar, from the uncertainty of our relations with Spain. France had been for some time carrying on war against Great Britain, having joined the Americans in their struggle for independence, and it was felt to be a mere question of time when Spain would throw in her lot with the other belligerents, in the hope of regaining possession of Gibraltar. This anticipation was soon realized. The Spanish Ambassador declared war in London on June 16th, and immediately afterwards the great siege commenced. The standard narrative of this, justly considered one of the most eventful struggles in history, is that written by Colonel Drinkwater, from a journal kept with the utmost detail, in which every phase is pictured with a fidelity not to be exceeded. Fortunately we have, in addition to this most interesting work, two private journals, one kept by Mrs. Green, the wife of the Chief Engineer, and the other by Lieutenant Holloway, his Brigade Major. As may be expected, Mrs. Green does not enter much into the military branch of the subject, but in her writings we obtain the most graphic pictures of the social side of the question, as also of the privations and sufferings of the garrison. There are many allusions to the Engineers, as was to be anticipated in a journal written by the wife of their Chief. The following extracts show the position before the blockade was actually enforced:—

"June 1st, 1779. I learn that our Govr has been out himself to invite the Spanish Govr of St Roque Don Joam Mendoza and his

Lady and all the Spanish officers to come in upon the 4th June" (The King's Birthday), "which shew'd all was well at that time.

"June 4th. Great bustle in the Garrison, the Field officers & Staff at a Dinner at the Convent. In the afternoon the Spanish Govrs Lady & Several officers came In but not the Govr himself. At Sunset their was a *feu-de-joye*. Madame Mendoza went from the Line wall, where she had seen the Firing, to the Convent, where there was a very Grand Gala, a Ball, & the Inside Court Yard all round the Colonade was finely Illuminated & all possible pains taken on the occasion.

"June 19th. All the Colonels and Field Officers of this Garrison were desired by the Govr to attend him in a Visit He made to Don Joachim Mendoza, the Govr of St Roque, upon hearing off his having been promoted to the rank of Lieut. Genl. They form'd a large Cavalcade, it was a very Warm Day. NB. They return'd to dinner, it was remarked that He did not receive this Visit as He ought to have done, but Seem'd Uneasy the whole time they staid, which was not very long."

Immediately after this event communication with the Spanish lines was cut off, and the blockade commenced on June 21st. The journal of Lieutenant Holloway begins at this time with the following entry:—

"Works begun and carried on in Gibraltar since the 21st June 1779, being the day that all communication was stopped between this garrison and the Spaniards."

During the earlier months of the siege the enemy evidently counted upon a speedy surrender of the fortress through famine. The drain on the stores of provisions, caused by the comparatively large population of the town, would, it was anticipated, be too severe for a prolonged defence. The combined French and Spanish fleet, consisting of sixty-six ships of the line, besides a large number of frigates and smaller craft, was cruising in the English Channel, and should prevent the possibility of relief from England. Another Spanish squadron, under Admiral Barcelo, was anchored off Algesiras, and from that point commanded the entrance to the Bay of Gibraltar. Under these circumstances it seemed impracticable for the besieged to receive any help beyond what might be conveyed by small coasting craft running the blockade under cover of night. Fortunately, however, for the defence in these early days of the siege, a large supply of provisions had been received in April, and this, combined with very strict economy in the issues, enabled the Governor to maintain himself pending the arrival of relief.

The garrison, whilst thus cooped up and cut off from communication with the outside world, were not idle. To quote Drinkwater:—

"The engineers continued preparing materials in their departments towards completing the works of the garrison, for which purpose strong

parties of the line were granted them daily, under the command of overseers. About 300 Jews and Genoese were also employed levelling heaps of sand near the gardens on the neutral ground, in order that if the enemy should approach they might not receive any protection or cover from our lower batteries. The picquets of the garrison were ready on the Grand Parade to support these parties in case they had been molested; but though they were at work within half musket shot of the enemy's advanced guard in the Micquelet huts, yet not the least attempt was made to disturb them."

This was in July, and again in August we read:—

"As affairs began to wear a more serious aspect a general activity reigned throughout the garrison, promoted not a little by the example of the Governor, who was usually present when the workmen paraded at the dawn of day. The engineers were busily employed in putting the works at Willis's in the best repair, and in erecting new batteries on the heights of the North front."

Holloway's journal goes into some detail as to these works. It may be well to quote a few entries to show the general character of the operations carried on; but they are entered far too continuously and too minutely to admit of more than an extract here and there:—

"June 23rd 1779. Began a casemated battery for one gun and two guns over it in the garden above Crutchets. These guns are chiefly to flank Lower Forbes's.

"June 26th. Began a palisading to enclose the principal magazine in the Castle.

"July 20th. Fresh beef was delivered out at 60 lbs. per regiment, the Artillery and Soldier Artificer Company being considered as equal to one.—100 lbs. of beef to the Generals and Admiral, 60 lbs. to the Civil list, and 60 lbs. to the Navy.

"July 28th. Began to form two batteries, one for 4 guns and the other for 3 guns, on that part of the hill called the Catalan post, lying between the Moorish castle and Caroline battery.

"Augt 7th. Began fitting up Poca Roca's cave as apartments for the Governor.

"Augt. 20th. Blowing the rock to form a Battery of 5 guns 60 feet above the North Lodgement, which is 900 feet above the sea. This battery is to annoy the enemy in their trenches, as well as to enfilade Fort Barbary and Fort St Philip."

Drinkwater's reference to the activity of the Governor leads to the remark that he was General George Augustus Eliott. He had served for many years as an Engineer, his first commission as Practitioner being dated on August 13th, 1741. He was promoted Extraordinary Engineer in 1744, and Engineer in Ordinary in 1747. He had of late years abandoned the Corps and reverted to plain military duties; but his long training in the scientific branch

of the service proved of the utmost utility during the protracted siege we are now narrating. It is probably true, as we see by sundry entries in Mrs. Green's journal, that there were at times bickerings and jealousies between him and the Chief Engineer; still on the whole Green seems to have given him the most loyal support, and to have fully recognized in the ex-Engineer a man under whom it was a pride as well as a pleasure to serve.

Drinkwater records on August 23rd that the corps of Engineers was formed into three divisions, and that several officers of the line were appointed to act as Assistant Engineers. The strength of the corps at this time in the fortress was nine, viz.:—Colonel W. Green, Chief Engineer; Captain John Phipps, Captain-Lieutenant John Evelegh, First Lieutenant William Booth, Second Lieutenant W. Mackerras, Second Lieutenant Thos. Skinner, Second Lieutenant John Johnson, Second Lieutenant Charles Holloway, Second Lieutenant Lewis Hay.

At a late period of the siege this number was augmented by the arrival of Lieutenant Johnston, on October 17th, 1782.

"Lieut. Johnston of the Engineers who is just landed joined the General and I *(sic)* at Windmill Hill."—(Holloway's Journal.)

Mrs. Green, under date July 28th, says—

"The following assistant Engineers were appointed L^{t} Burton, R.A., L^{t} Chambre, 56th Reg^{t}, L^{t} Alt 72 Reg^{t}, L^{t} Schants Hardenburgs" (Hanoverian Legion).

The Governor made several additions to his staff at the same time, amongst which he named Captain-Lieutenant Evelegh one of his aides-de-camp.

On August 27th Mrs. Green records—

"It has become now quite fashionable to get all the news each one could collect, and by way of Gaining all that, everybody was using Spy Glasses from Morning to Night, all those that affected great Cleverness were ever ready with a pencil & paper, and it was really Laughable enough to see with what a Jealous Eye each Aid de Camp look'd at the other, fearing He should be the first to communicate his Ideas of what He supposed the Enemy was about! These remarks I have made (Such as I could not possibly make from my own Personall observation) I think may be depended upon, as they are from our own Corps."

Sept. 13th. "The Gov^{r} has given the Name of Greens Lodge to the highest battery newly erected; it is a work now found to be of a very Essential Consequence, and was first proposed to the Gov^{r} before the least Idea of the Communication being stopt, even as far back as March last by Colonel Green."

This is the battery referred to by Lieutenant Holloway as having been begun on August 20th. It was finished on September 10th.

Great dread was from the first entertained of a possible bom-

bardment, a dread which subsequent events proved to be by no means unfounded. Many precautions were consequently taken to mitigate its effects. The pavement of the streets was removed ("Began unpaving the streets, September 14."—Hol. Journal), and all lofty and conspicuous objects taken down where possible. Traverses were also thrown up to make the communications more secure. Meanwhile the enemy were busily engaged in constructing batteries in the line which connected their two forts. On the night of October 19th they opened the embrasures, when it was found that they had completed three batteries, two of fourteen guns each, and one of seven guns. As these batteries were about a mile from the nearest works, it was not at the time anticipated that they would cause much damage; but the bombardment of 1781 proved the contrary.

Many entries appear in Mrs. Green's diary, which show that Admiral Duff had not succeeded in imparting confidence in his proceedings to the military, or at least to the Engineers; as her remarks on this point may be considered a reflex of public gossip. Here is one:—

"Oct^{r} 9th. This forenoon a Circumstance happened in the Bay that gave great displeasure to the Garrison, viz. a Boat from Barbary Loaded with Bullocks was going out to Algezira. It is supposed that we might have brought Her Into the Mole with Ease had our frigate" (the *Enterprize*) "gone out; all this adds to the discontent of every Body, and many very Disagreable things were said on the Occasion, & some of the Officers of the Navy and Army behav'd in a Slighting Manner to Admiral Duff, who carried it with an Air of Indifference!"

The remainder of the year passed without any further offensive movements. The enemy, as yet, had made no attempt to advance beyond their original lines, nor had they returned to any considerable extent the fire with which they had been molested from the batteries on the high ground above Willis's, one of which has been referred to as Green's Lodge. It was during this time that the first experiments were made in firing 5½ inch shell out of guns with short fuzes, the suggestion having been made by Captain Mercier, of the 39th Regiment. Drinkwater records that—

"these small shells, according to Capt. Mercier's method, were dispatched with such precision, and the fuses calculated to such exactness, that the shell often burst over their heads, and wounded them before they could get under cover."

Holloway records experiments with light-balls also:—

"Nov^{r} 11th. Some experiments were tried on the line wall with fire balls. One of Mr. Healy's invention, 5½ inches, burnt 1¾ minutes—very strong fire. But L^{t} Withams was found to give an exceeding good light —answers every purpose of the other and burnt 5 minutes."

All through these weary months, although from time to time some small vessel succeeded in eluding the vigilance of the blockading squadron, and brought most welcome additions to the rapidly waning supplies, the scarcity of food was becoming more and more felt. In the month of January, 1780, Drinkwater says :—

"Not only bread but every article necessary to the support of life was hard to be procured, and only to be purchased at exorbitant prices. Veal, mutton, and beef sold from two shillings and sixpence to four shillings per pound, fowls eighteen shillings per couple, ducks a guinea, firewood five shillings per hundred weight, a pint of milk and water one shilling and threepence. Vegitables were extremely scarce—a small cabbage cost one shilling and sixpence, Irish butter two shillings and sixpence per pound, eggs sixpence each, and candles two shillings and sixpence a pound."

This may be checked by the following entry in Mrs. Green's diary :—

"The Prices of Meat & Poultry at the Close of the year 1779 : Beef per lb. 3^s, 9^d, Veal per lb. $3^s/6^d$, Pork $2^s/6^d$, Goat $2^s/6^d$, Flower, per lb. $10\frac{1}{2}^d$, Pease $/5^d$, Turkey a peice £3. 0. 0. Geese a peice £1. 10. 0. Fowles a peice 7^s, Duicks a peice $10^s/6^d$, Peigons a pair $5^s/$, and when we got Fish it was beyond all Price."

Still every one kept up a good heart, and Christmas was celebrated as of old.

"Christmas day. This Day was tolerably fine as to Weather, and every Body try'd to appear Easy & Contented. We had a few Friends to dine with Us, and upon the whole We did the Best we could.

"December 27th. It Blowed very hard all this Day & the next Night, but to let us See how Unexpectedly the Goodness of Providence is at Such times, as We poor Short Sighted Mortals think ourselves in the utmost Danger, behold in the course off the last 24 hours we had a Blessed supply of Wood, which had been brought down to the shore near to the Rivers, intended for the use of the Camp, it was chiefly Brush Wood. It was a great Supply for this Garrison, as it is at the least Calculated to amount to 500 Quintals, & will be enough to supply the poor Inhabitants & Soldiers Families for Six Weeks. It was Truely a God Send and highly Worthy to be Remembered, and it was likewise a Loss to the Enemy."

Whilst the brave garrison were thus holding out in spite of privations and difficulties, the home Government was anxiously preparing means for their relief. Admiral Sir George Rodney, who was appointed to the chief command in the West Indies, was directed to attempt on his way the relief of Gibraltar with the powerful squadron of which he was at the head. His first success was the capture, on January 8th, 1780, of a rich Spanish convoy of fifteen merchantmen, laden with wheat, flour, and other provisions, most acceptable under the circumstances, if he could

succeed in escorting them into the bay. A week later he fell in with the Spanish fleet, and, after a sharp engagement, gained a complete victory, destroying or capturing the greater number of the ships, and driving the remainder to seek shelter in Cadiz. The road being thus open to him, he proceeded triumphantly to Gibraltar, where he landed the supplies he had brought from England, as well as those captured on board the Spanish convoy. This is Mrs. Green's account of the affair:—

"Tuesday 18th January 1780 About 10 o'clock a Joyful Sight presented! a Prize brought in, taken by some of our Convoy, a fine Rich ship Loaded with Oil, Tobaca, Soap, & Bale Goods. At Noon a Much larger & more Valuable one came In, a Prize to one of our Men of War. She was brought In by a Feint of the Man of War who had taken Her—is loaded with Brandy & " (word illegible). "Now we are certain off the Good News. There has been an Engagement indeed. In the Close of the Day an English Frigate came in, which proved to be the *Apollo* Capt. Pownell. He was greatly surprized, when going on board the *Panther*, to find that Admiral Duff was not on board at such a Juncture as this, but he was informed the Admiral was a QUIET MAN.

"Jan^{y} 20th. Early in the morning the *Prince George*, 90 Guns, Admiral Digby, came in, on board of which was His Royal Highness Prince William Henry" (afterwards King William IV.). "The Prince came on Shore at Noon, had no particular Honors paid him. He went to the Convent, from thence he was attended by the Gov^{r}, the other Generals, & the Chief Engineer up the Hill as far as Willis's.

"22nd Jan^{y}. We got 2 English Sheep from our old Friend Admiral Digby. This morning more of the Small Pox appeared." (This is one of the first entries about that fearful disease, the ravages of which were before long to prove so fearful in the midst of the cooped-up garrison.) Captain Evelegh's* children are all Lay'd down in the Disorder. He is obliged to leave his House for the time. The General will not allow of Innoculation as yet, but says He will as soon as it gets among the Troops.

"Feb^{y} 5th. The Prince came on Shore about 9 and Walked first to the Cave &c. the Colonel" (Green) "with him, & ended the Walk at the Mount, where every thing was in proper readiness" (this alludes to the arrangements made for him to breakfast there with Colonel and Mrs. Green). "I was much pleased with Him. He is a very fine Youth, and must be liked in any Situation. His Questions were proper. They all wore the face of being the Result of a proper Curiosity."

The Spanish Admiral, Don Juan de Langara, who had been wounded in the action with Rodney, was landed a prisoner in the town, where he was treated with the utmost courtesy and

* Engineer and aide-de-camp to the Governor. Holloway in his journal has an entry on January 15—"The small pox broke out again in Capt. Evelegh's family." The introduction of the word "again" proves that it must have shown itself originally at a very early date.

consideration. The disembarkation of the stores was a long business, and it was not until February 13th that the fleet got under weigh with their prizes, leaving behind them two ships of the line and two frigates to aid in the defence. The second battalion of the 73rd Regiment, which had been intended for Minorca, was also landed at the Governor's request. This battalion, being upwards of 1,000 strong, made a most welcome addition to the garrison, which was beginning to suffer considerably from scurvy. ("January 29th, 1780. This afternoon was landed the 2nd Battalion 73rd Regiment [or Highlanders], consisting of 1,100 men."—Holloway's Journal.) The Spanish Admiral was released on parole, and many women and children taken on board the fleet for conveyance to England. Admiral Duff also embarked for the same purpose, and Captain Eliott, of the *Edgar*, thereupon hoisted his broad pennant as Commodore.

Thus the blockade, which had lasted for eight months, had so far proved a complete failure. The stores and magazines of the fortress were once more full, and the garrison stronger than ever, whilst the spirits of all were greatly raised by the favourable turn affairs had taken.

During the presence of the British fleet in the bay, Admiral Barcelo had retired with his small squadron under the protection of Algesiras. As soon as they had left he returned to his former anchorage, and again undertook the sea blockade. His strength, however, at first was not sufficient to carry out this duty efficiently, and several ships found their way into port, still further adding to the supplies. Before long he was reinforced by four line-of-battle ships and two frigates, on the arrival of which he was enabled to restore an effective blockade.

The months of March, April, and May passed without any movements on the part of the besiegers beyond developing and strengthening their batteries. It seemed as though they were determined to renew the blockade and again to trust to its effect. From time to time small vessels would find their way in, and bring welcome additions to the supplies; still, as time passed, scarcity began once more to make itself felt, and the utmost economy in the public issues became necessary. Meanwhile the small-pox spread with alarming rapidity, and Mrs. Green's journal bears record to the state of anxiety caused thereby:—

"Feb^{y} 25th. The Small Pox is beginning to be very fatal to the Children; all means are try'd to obtain Leave to Innoculate, but as yet to no purpose.

"March 21st. We killed a Small Cow this forenoon for the Use of the Family, & sent some peices to Several Friends, likewise to some

Families who had sick Children. The Colonel would not allow any of this Cow to be disposed off. It weighed 400 lbs. NB. We had been offerd 25 Guineas for it, and I daresay might have had £30, for Every body was Selling as Dear as they thought proper, but I detested the imposing practice.

"April 6th. No Innoculation yet! most people are displeased at this as it is certainly much better for the men & poor Children to have it now than when it is warmer. For my own part I am exceeding Anxious for Our Dear little Girl, and did it depend wholly upon myself I would not ask any leave.

"April 8th. I gave 6 reals" (2s. 6d.) "the pound for Veal this day. Many very Unpleasant Circumstances now in the Public Way. The Commanding Officers Seem all to think they have too little Attention Shew'd them.

"April 11th. Small Pox Raging very bad. Children Dieing every Day.

"April 12th. Particular deal of *Engineering* business going on not quite pleasing to the Colⁿ." (Probably some little friction with the Governor.)

"April 17th. The Small Pox is now geting into all the Regᵗˢ, a Man of the Soldier Artificers exceedingly bad with it. No Innoculation Yet!

"April 26th. The Soldier of the Company Died."

On Friday, May 5th, Mrs. Green's daughter Charlotte sickened with the disorder, and the subsequent entries are full of her condition. She seems to have progressed very favourably, and on Wednesday, May 17th, Mrs. Green records, "Every circumstance going on in the most favourable manner"; and again on Sunday, May 21st—

"She went out an airing. We are exceedingly happy on the occasion. She had about 300 all over her Body and off the finest kind. During the fortnight she has been ill More than 50 English Children have Died, and Several Soldiers besides Inhabitants. The whole Air is infected, and a very Dangerous fever is also in the Garrison. Every Means has been try'd to obtain the Governors leave to Innoculate, his Refusal makes every Body Unhappy."

On May 22nd one of her servants sickened with the same disorder:—

"25th May. We are greatly Distresst in our family. The Young Woman very bad. I am particularly hurt at it, as she now wishes She had been Innoculated. I am too much distresst to keep any public Journal, indeed it does not become necessary, as most things remain in the Same Unpleasant Way. The Spanish Admiral doing his Utmost to keep up the Blockade. However we Sometimes get In a Boat with a small Supply, every thing at this time as Dear as possible—nor is there any Method taken to make it better. The Govr Says He has not

any objections to the Fresh Meat being as Dear as Ever. It is very easy to know his Reasons for Saying so. Contradiction only!

"June 1st. Our Servant Maid is past all Possibility of Recovery Every Means is try'd, but we find it will not Do. Men, Women, & Children Dieing every Day, and the Utmost Distress now appears in every Body. The Air is full of this Cruel Infection. It is to be wished that the Innoculation had been allow'd, that would have stop'd this long agoe."

The servant died on June 4th. There were apparently no rejoicings on this day for the King's birthday, as there had been on the previous year.

"6th June. More & more bad accounts of the fatal Effects of the Small Pox, and many Severe things said in consequence. It can not be Wonder'd that the Lower Degrees of People should be much hurt at all these bad times. Their Provisions so bad, Nothing to be got to assist them, and the Losing so many fine Children has been a heavy Stroke upon them; but we hear that a great Person in the Garrison says He thinks it a fortunate circumstance to those Soldiers who have Large familys to Lose three or four Children!"

Holloway does not seem to consider the ravages of small-pox worth an entry in his journal, beyond the one already quoted. On the other hand, he has the following in June:—

"14,000 Casks have been used for temporary works since the 21st June 1799. Brushwood has been collected from the back of the Rock, which has made 1265 Fascines, and the wooden hoops from the above casks have made 1030 Fascines."

On June 7th a determined attempt was made by the Spanish fleet to destroy the vessels lying in the bay with fire-ships. The promptness of the British sailors prevented any serious consequences. Boats were at once manned, the fire-ships towed clear and run ashore under the walls, where they were extinguished. They afterwards furnished a very welcome supply of fuel, which was at the time extremely scarce. Mrs. Green thus records her impression of the event:—

"It was a most Grand tho' Alarming Sight, as they burnt with great Violence, it Seem'd to me just so Many Moving Mountains of Fire! To hear the Drums beating, the Noise of the Guns from the Garrison, & all our Ships, together with the bursting open of the Portholes in the Fire Ships, was beyond the power of my Pen to express! I was actually Stupid with Fright and at that Dead time of the Night also.

"June 12th. Worse and Worse in the Small Pox"

"Augt 2nd. Major Horsfall of the 72d Regt Sold a Milch Cow, for which he received Fifty Guineas and a pint of Milk every Day!

"Augt 15th Our only Comfort is that the Small Pox seems to be Dieing away, indeed it was dreadful to hear the Daily Loses. More than

500 have Died, the Smallest Number has been of Soldiers, as there has not been more than 50 Died, but their poor Families are greatly thinned.

"11th Sepr. The Colonel had an Unexpected & Unwelcome Conversation with * * * about some Workman belonging to the 58th who was employ'd not where it was Supposed. The Coln was totaly Ignorant of it, as the man had been discharged from the Kgs Works since last March. He spoke his mind very freely to * * *. This I am sorry for, as I fear may Occasion some Unpleasant Consequences, it did bring on a good deal of Un-Comfortable Conversation amongst the Engineers.

"13th Septr. This is the meeting of American Gentlemen to Celebrate the Memory of Genl Wolfe, Colonel Green President, it Consisted of 21, all concluded exceedingly Moderate & Agreable."

The American gentlemen here mentioned were evidently those members of the garrison who had served in the American war against France, Colonel Green himself having been of the number.

On October 1st the besiegers made their first step in advance by commencing what was gradually developed into a powerful battery, about 700 yards in front of their lines. For a long time it remained isolated, but, after they had suffered considerably in the attempt to keep up communications in the open, it was eventually connected with their other works by boyeaux of approach. The garrison named this the Mill Battery. Hitherto the townspeople and troops had drawn large supplies of vegetables from the gardens in the Neutral Ground; now, however, that the enemy had brought their approaches so much nearer these were rendered untenable, and from this time the besieged were compelled to trust entirely to the cultivation of the soil within the limits of their works. This was so successfully carried out that Drinkwater states they were enabled to produce *almost* sufficient for their consumption.

Mrs. Green records a curious instance of the courtesies of war, under date October 3rd :—

"Memorandum. As the Govr expects Count D'Estaing will Reconnoitre the Garrison in a Boat, the officers Commanding the different posts are not to fire at Him except He comes too near, but in that Case are to fire over him.

"Octr 16th. Lt Holloway of the Corps of Engineers has been for Some Days employ'd Laying a Large Boom at the New Mole, a Work of Labour & trouble."

Curiously enough, Holloway, who is most minute in his record of the work done by him, makes no allusion to this boom, although in the September of 1779 he has an entry of having laid one between the Old Mole Head and the stone wharf at the extremity of the glacis.

"Oct. 18. The Salt fish is quite over, that is, amongst the Troops. NB. No Sorrow Shown on that occasion.

"Oct. 26th. The Beef is exceedingly Bad quite stinking.

"Oct. 27th. Our garrison is very Alert in all Respects, & Struggling in a most Surprizing Way every part, which indeed seem'd as Strong before as possible, the Number of Traversses is prodigious, & every posible attention is paid for the Safety off the Troops. The Govr & Chief Engineer Seem wholly devoted to Care & Anxiety for the Garrison" (Mrs. Green has evidently for the moment forgiven the Governor).

"Novr 1st. Most of the Regts are affected more or less with the Scurvy.

"Novr 6th This forenoon the * * * was at our House & Unexpectedly gave a good deal of trouble & Vexation to the Cheif; it hurt his Temper all Day, & broke In upon his Intentions."

On this day Holloway records that the Sergeant-Major of the Artificers found a coat of the 72nd Regiment at the foot of the Rock On the following day he enters—

"One of the Serjeants of the Soldier Artificer Company found the skeleton of a man near the place where the Serjeant Major found the coat, from which it is plain that a man of the 72d regt has fallen down the rock and was killed in attempting to desert.

"Decr 5th. Lt Booth of the Corps of Engineers is to have the Inspection as Director, under the Chief Engineer, of all the Mines and all Persons employed therein, Takeing his Orders from & reporting to the Chief Engineer. NB his appointment is Eight Shillings per Day for the above Duty. It has given Universal Satisfaction, particularly to the Corps, as Mr. Booth is much Esteemed by Every Body."

The Lieutenant Booth here mentioned made some interesting drawings during the siege, which are now in the Royal Engineer Institute at Chatham; one of them is a sketch of the Rock from Catalan Bay, and has written on its face in ink—

"The course taken by a Corporal of the Artificers Compy, in order to discover the way that two Soldiers of the Garrison had taken when they deserted from us to the Spanish Lines, one having only succeeded, the other being killed in the attempt to escape. His body we found at the point D, with his brains completely beaten out, the Rope being broke, part of which was round his middle."

On the back are the following memoranda:—

"Memo. by Lieut. Booth, Engineers, January 1782. On the Sunday before the Sortie was made on the Enemys approaches and New Works, General Boyd asked me my opinion of them (Lieut. Stewart of the R.A. had mentioned my observations to him in the course of conversation when at dinner). I told his Excellency that they were so badly flanck'd that they might be attacked without a Gun to bear upon us. Upon my saying this he (the next morning) went out to see if I was right (I believe), and *being convinced* the Sortie was made and works burnt and

completely destroyed, 1782. An old servant's memoranda: When the Enemy had taken up their Ground and formed their encampment, and had also commenced their batteries in the Lines, Gen[l] Elliot ordered me to take Views of the Country, which I did, and which he so much approved that they were sent home to be lay'd before the King. These attentions, together with my being obliged to visit the Galleries of the Mines under Landport Glacis, and also lying so long exposed to heat and rains during the time I remained in Camp, brought on a violent faver (*sic*) so as to deprive me of my senses, and in that state I was sent to England in an Ordnance Vessel, yet obliged to give 20 Guineas for my Passage. In consequence of my being hurried away in this extraordinary manner I was not allowed any share of the prize money or any share of the Honor which was mine."

In Lieutenant Holloway's journal are the following entries on this subject:—

"Jan[y] 17, 1782. Was sent for to Camp to L[t] Booth who was insane, sent to the Hospital. Took L[t] M[c] Kerras and went to camp to Booths marquee, and sealed up his trunks, boxes, and bureau.

"Jan[y] 22[d] 1782. In Hospital with D[r] Baynes to see L[t] Booth who was outrageous and fastened in his bed.

"Feb[y] 20[th] 1782. L[t] Booth went home in the *Viper*."

Lieutenant Booth's memoranda continued:—

"It was no less extraordinary than strange that after my being in the Garrison 8 years, viz. from 1774 to 1782, no mention should have been made of me by Col. Drinkwater in his account of the Siege, although he names all the other officers of Engineers" (this is not the fact) "when I commanded a Brigade and in the Camp a Year and a half, having nothing more than Canvas over me. I had the Governors thanks once for a Report I had made of a Battery traced out by one of the Enemys Engineers, which no other officer had seen.

"I will venture to affirm I went through more fatigue of the Service during the Blockade and Siege (which lasted nearly 3 years) than any officer in the Place."

The last entry in Mrs. Green's diary is dated January 5th, 1781, and ends quite abruptly. She had been in very failing health, and many of her later entries dwell on her illness. It may be presumed that she felt no longer equal to writing after that date. She left the Rock in July, 1781.

July 22nd, 1781. Went down to the Mole with Mrs. Green, who was going to England."—(Holloway's Journal.)

The second relief, under Admiral Darby, took place on April 12th. The convoy consisted of nearly a hundred vessels, and was led by several men-of-war, the remainder of the fleet lying under the Barbary shore, not wishing to risk an entrance into the bay for fear of the fire-ships. No sooner had the van of the convoy

come to anchor off the New Mole than the besiegers, evidently feeling that their renewed attempt at a blockade had failed, opened a bombardment from every piece of artillery that had been placed in battery,viz., one hundred guns and fifty mortars. This bombardment was maintained with vigour for a very lengthened period, and resulted in the almost utter destruction of the town, and a great loss of life both in the garrison and amongst the townspeople. The stores were consequently landed as rapidly as possible, and the fleet hastened to take its departure to avoid damage.

As a temporary protection, barrels of flour, as they came ashore, were built up to cover the fronts of the casemates in the form of traverses. The occupants, however, promptly scooped out the contents and fried them into pancakes, so that before long the protection afforded became more apparent than real, and the Engineers were compelled to provide cover of a non-edible nature.

The fleet had brought news of several promotions for the garrison. Amongst them Colonel Green was raised to the rank of Brigadier-General, Lieutenant Holloway being appointed his Brigade Major.

From this time Holloway kept a private diary of his own movements, which it is to be presumed he thought more important now that he was a staff officer. This was in addition to the diary of the works executed, which has been the source of the previous quotations. One of the first entries in the new journal is—

"April 17th. Was appd Brigade Major to Brigr Green. NB. I live at Mount Pleasant in Brig. Genl Greens house."

Shortly afterwards there is a very painful entry:—

"May 28th. Received orders to acquaint the 2 men of the Soldier Artifr. Co. that were tried by a G. C. Martial this morning that they were to be executed at Guard mounting tomorrow morning—Went into town and before the offrs. and whole Main guard informed the criminals of their fate.

"May 29th. After breakfast went into town for general orders. Waited at the Kings bastion until the artificer Co. came from the southward. Joined them and went to the place of Execution. Stayed with the Field officer of the day till the law was put in execution."

These men were sentenced to death for plundering the houses that had been abandoned by the inhabitants during the bombardment.

This bombardment, which at first had exceeded fifteen hundred rounds per day, gradually fell off in intensity, until by the middle of June it was reduced to less than a third of that amount. In another month it had ceased, and no further offensive operations were undertaken beyond extending the advanced batteries and

completing their connection with the works in rear. Time passed by until November; when the Governor decided that the moment had arrived for assuming the offensive in his turn. For this purpose he determined upon making a sortie on the night of the 26th, with a view to destroying the new works before they had opened fire.

All the preparations were made with the utmost secrecy, and it was not until the promulgation of evening garrison orders that any one except the few superior officers in the Governor's confidence had the least idea of what was contemplated. The troops who were to take part in the operation were divided into three columns, to each of which was attached an Engineer officer and a working party composed of soldier artificers and infantry. The three Engineers thus employed were Lieutenants Thomas Skinner, John Johnson, and Lewis Hay.

"Nov^{r} 26th. Conveyed orders to L^{t} Skinner Johnson and Hay to attend the Gov^{r} & Brig^{r} at Court room to receive instructions, ordered Artificer Co. to march at once to Hargraves parade. Told them off for the different columns they belonged to."—(Holloway's Journal.)

Altogether the force numbered about two thousand men. The sortie was made at 3 a.m. on the morning of November 27th, after the moon had set. Although discovered by the enemy immediately on passing beyond the lines of the defence, they pushed vigorously forward, and were speedily in possession of the whole series of advanced batteries. The infantry were sent well to the front to cover the working parties, and the operation of dismantling and destruction went bravely on. It is a curious fact that, although the main line of the enemy was only 700 yards distant, no attempt was made to interfere with the assailants. Everything was soon ready for the fire faggots, and when these were lighted the flames spread with astonishing rapidity. Trains were laid to the magazines, and then, only an hour having elapsed since the start, Brigadier Ross, who commanded, withdrew his advanced force and prepared for retreat. Several small explosions of gunpowder took place whilst the troops were retiring, but no casualties arose. Just as the rear had reached their lines the main magazine blew up with tremendous effect, and vast masses of timber were hurled into the air, which, falling into the flames, added to the general conflagration. The total loss of the garrison in this brilliant affair was only four men killed and one officer and twenty-five men wounded.

General Green and his Brigade Major did not accompany the sortie. This is Holloway's account of what he saw:—

"Nov. 26th 1781. I joined the Brig^{r} and Gov^{r} and marched down the

town to Landport, where the Gov. desired the Brig^r not to go out. We then turned up to the Grand Battery, and went to the North Bastion. The Gov^r went out with the troops. We remained on the North Bastion the whole time of sortie. Several shots from Fort Barbara to the North Bastion & 3 or 4 shells burst over our heads, only one shot near the troops on Isthmus, that I could see. About 40 minutes after 3 enemy's works first on fire. At 4, from the West End of West gun battery to the east end of the 5^th^ branch of their former approaches, was one continued flame of fire, and the eastern parallel from the opening to the south end. Ab^t ¼ p^t 4 the 4^th^ branch was set on fire, and it soon communicated the whole length. 20 min. bef: 5 the whole det: were within our barriers. At ¼ p^t 6 Brig^r and I left North Bastion and went southward to breakfast, then to the top of the rock to reconnoitre remains of enemy's works."

In the main battery was found the written report of the officer in command of the post, drawn up in readiness for his relief at dawn. In this it was recorded that nothing extraordinary had occurred—a statement which events proved to be somewhat premature.

The Engineers were all this time very busy adding to the cover of the batteries. We read in Drinkwater :—

"The materials with which the works were now repaired were collected from the coal ships, which had been run ashore in the New Mole after Admiral Darby's departure. The sides of these vessels were cut up, under the direction of the Engineers, into large solid pieces, of such form and dimension as the purpose dictated to which they were to be applied. Of these materials the batteries at Willis's were at this time formed, the angles being connected and secured by strong knees and bolts, having transverse pieces within, which were also kneed. When the caissons for the merlons were thus framed, they were filled in the front with large layers of junk and sandbags behind. The height of the merlons were between ten and eleven feet, and the upper parts were supported by strong beams across the embrasures, forming hoods, these were three feet deep, and extended about six feet in length over the embrasures, by which the guns were protected and the artillery men well covered."

On December 20th Brigadiers Ross and Green were promoted to the rank of Major-General, and Lieutenant Holloway, who had been acting as Brigade-Major, now became Green's Aide-de-Camp. Holloway has the following entry on this subject :—

"Nov^r 20^th^. At 2 o'clock an off^rs guard came to mount on M-Gen^l Green. After he had received the guard he asked the officer to dinner. I went by his order to the Adj^t Gen^l with his compliments, to desire that the guard might be taken off. The Gov^r ord^d the F^d off^r of the day to be informed of it, which was done."

Directly after the sortie the enemy had begun to repair damages, and at the same time still further to develop their batteries. Many months thus passed, the siege degenerating into an artillery duel. On March 24th the 97th Regiment arrived, and was disembarked on the 25th, 700 strong. On the same day a shot from the enemy's batteries caused a serious casualty, and with reference thereto Drinkwater relates :—

"The Boy who was usually stationed on the works, where a large party was employed to inform the men when the Enemy's fire was directed to that place, had been reproving them for their carelessness in not attending to him, and had just turned his head toward the Enemy when he observed this shot, and instantly called for them to take care; his caution was however too late. It is somewhat singular that this boy should be possessed of such uncommon quickness of sight as to see the Enemy's shot almost immediately after they quitted the guns. He was not, however, the only one in the Garrison possessing this qualification. Another boy of about the same age was as celebrated, if not his superior. Both of them belonged to the Artificer Company, and were constantly placed on some part of the works to observe the Enemy's fire. Their names were Richardson and Brand, the former was reputed to have the best Eye."

Intimation reached the garrison on April 11th, 1782, that great preparations were making for a most vigorous attack, and that the Duc de Crillon, who had recently captured St. Philip's, Minorca, was to command, with 20,000 French and Spanish troops, in addition to those who were already present, and that Admiral Don Bonaventura Mirim would accompany him with ten sail of the line, besides floating batteries, gun and mortar boats. On the 14th the crews of several of the large ships struck their yards and topmasts, and commenced cutting down their poops, evidently in preparation for conversion into floating batteries. These symptoms caused the Governor and General Green to turn their attention to the sea line of defence. The beach behind the Old Mole was fortified with a row of sloping palisades, Waterport Gateway was well barricaded, chevaux-de-frise placed at the foot of Landport Glacis, and all the batteries on the line put in the best order for defence, and well supplied with grates for heating shot.

"On a fine day in May, 1782, the Governor, attended by the Chief Engineer and Staff, made an inspection of the batteries at the North Front. Great havoc had been made in some of them by the enemy's fire, and for the present they were abandoned whilst the Artificers were restoring them. Meditating for a few moments over the ruins, he said aloud, 'I will give a thousand dollars to any one who can suggest how I am to get a flanking fire upon the enemy's works.' A pause followed this exciting exclamation, when Sergeant-Major Ince of the Company, who

was in attendance upon the Chief Engineer, stepped forward and suggested the idea of forming galleries in the rock to effect the desired object. The General at once saw the propriety of the scheme, and directed it to be carried into execution."*

A body of miners was consequently formed from the Artificers' Company, and placed under the direction of Sergeant-Major Ince, for the purpose of carrying out the idea. The following are the orders of the Chief Engineer on the subject:—

"22nd May, 1782. A gallery 6 feet high and 6 feet wide through the rock leading towards the notch nearly under the Royal Battery to communicate with a proposed battery to be established at the said notch, is immediately to be undertaken and commenced upon by 12 miners under the executive direction of Serjeant-Major Ince."

A second order, dated July 5th, 1782, runs thus:—

"A gallery of communication 6 feet 6 inches high and 6 feet wide through the intermediate rock, between the cave at the head of the King's lines and the cave near the west end of the Queen's lines is forthwith to be commenced upon by a body of miners and labourers expressly appointed for that service."

On July 15th the first embrasure was opened in the face of the rock, and the gallery widened to allow of the recoil of the gun. Holloway thus refers to this fact: "Whilst there (*i.e.*, at the gallery) they pierced the rock so as to form a casemated embrasure." When ready, a 24-pounder gun was mounted in it. By September emplacements were completed for five guns, and within a year it was extended to the notch referred to in the Chief Engineer's orders, where a battery was eventually established, and called St. George's Hall. About this time we get another glimpse of the jealousy which existed between the Governor (who could not forget that he had been an Engineer) and the Chief Engineer. The following occurs in Holloway's journal:—

"June 24th 1782. After dinner I mentioned to the General that I was not so much upon the works with him as I wished. That when I first came to him the prospect wch gave me most satisfaction was the improvement I should get in my profession by being constantly with the chief engineer, by wch I shd know more of what was going on in our line than any other. Therefore I hoped to go with him in future whenever he went to lay out any work or to take up ground, or any thing else that he thought might be instructive, for otherwise I was under some disadvantages, being constantly with him, and I had no intercourse with my brother

* Conolly: "History of the Royal Sappers and Miners," vol. i. pp. 13, 14.

officers nor any conversation with them concerning the works, fearing they should conceive I was echoing his sentiments. He acknowledged the justness of my argument and promised to be as communicative as possible, but of late the G——r had been so much the C.E. that he was ashamed to let me see it."

On August 9th is the following about the new gallery :—

"Serg^{t} Major Ince sent for me to come to the gallery to the Notch, finding that he was mistaken in the thickness of the rock where the embrasure is to be broke thro. He stopped the miners till he heard from me. Rectified his mistake and gave him directions for forming the emplacement for the gun. Reported to the Gen^{l} and the Gov^{r} that the 2nd embrasure was broke thro' and how far it was capable of commanding. This day I drew one of the enemy's junk ships or rather floating batteries for Cap^{t} Curtis, who told me he sh^{d} send it to the Admiralty The General liked it so well that he desired one for himself, w^{ch} I did in the course of the day and gave him."

This is the first mention of the celebrated floating batteries.

"Aug. 29$^{th.}$ By Gen^{ls} order went to examine and take an a/c of the forges for heating shot in town, wrote out a state of the forges for the Gen$^{l.}$

"Aug. 30$^{th.}$ With the General along the Line Wall to settle the places for the forges for heating shot."

On the night of August 15th the besiegers broke ground with an enormous parapet about 500 yards long and of great height, which, as the Spaniards afterwards affirmed, took 1,600,000 sandbags to construct. No less than ten thousand men were employed at the work, which was not discovered till daybreak. This was gradually developed into four batteries of 14 guns each, and one of 8 guns, and occupied the whole eastern side of the isthmus, as the San Carlos batteries did the western.

About this time the Comte d'Artois arrived in the besiegers' camp, and was received with much honour and ceremony. It can therefore be recorded that the future kings, both of Great Britain and of France, took part, on their respective sides, in this memorable siege.

The great development of the advanced batteries that had now taken place rendered them so formidable that General Boyd proposed to open on them with red-hot shot. This was done on September 8th. In a few hours a large extent of both batteries and parallel was on fire, the fascines with which they had been revetted burning fiercely. By nightfall the damage done was almost as extensive as that caused during the great sortie. This unexpected blow apparently hastened the measures of the Duc de

Crillon, for on the next day, in spite of the unprepared state of some of his works, and the ruinous condition of others, he opened fire all along his line from 170 pieces of artillery. This bombardment was kept up with unabated vigour for several days, evidently in preparation for the grand attack.

On the morning of September 12th the combined fleets of France and Spain entered the bay, raising their naval strength to 47 sail of the line, 10 battering ships, and innumerable smaller craft. These battering ships were cased in timber, and roofed over with strong rope-work netting, covered with hides at so steep a pitch as to present the maximum of protection against shell fire, their strength being such that they were thought to be indestructible. They were as follows:—

Pastora	31 guns ..	.. 760 men
Talla Piedra	31 „ ..	.. 760 „
Paula Prima	31 „ ..	.. 760 „
El Rosario	29 „ ..	.. 700 „
San Christoval ..	28 „ ..	.. 650 „
Principe Carlos ..	15 „ ..	.. 400 „
San Juan	13 „ ..	.. 340 „
Paula Seconda ..	13 „ ..	.. 340 „
Santa Anna	11 „ ..	.. 300 „
Los Dolores	10 „ ..	.. 250 „
	212 „	5,260 „

They anchored for the day, but early on the following morning (the memorable 13th September, 1782) they once more got under way, and stood to the southward, to clear the men-of-war. This was a signal to the garrison to prepare for the attack. The sea batteries were at once manned, and the shot furnaces lighted. As there were not sufficient furnaces to supply all the guns, huge bonfires were also lit, in which shot were heated in large quantities. The Artificers were employed in this work, which they called roasting potatoes. Meanwhile, the ships having cleared their fleet, wore to the north, and proceeded to take up their respective stations. It was now a little before 10 a.m., and as soon as they had anchored the fortress opened fire. This was promptly returned, and ere long the artillery duel was in full vigour. The Spanish batteries on the isthmus commenced at the same time; thus the rock was enveloped on two sides in a volcano of fire. The roar of 400 guns, served with the utmost rapidity, could have been heard for many miles, and the stream of projectiles pouring into the devoted fortress was incessant.

Heedless of this raging fire, the artillery men stuck to their guns, and hurled a constant succession of red-hot shot on the roofs and sides of the floating batteries. In spite, however, of all their efforts, these carefully protected structures seemed invulnerable. The heaviest shells rebounded from their roofs, and the 32-pounder hot shot appeared incapable of effecting any lodgment in their bulwarks. Those of the crews who were not serving the guns stood prepared on the first symptom of fire with appliances for its suppression. It was even said that pipes had been laid in all directions around their sides, by means of which water could be promptly poured upon any point. Thus the fire of the garrison continued without any visible result, and meanwhile they were themselves suffering severely both from the sea and also from the isthmus. Their efforts were, however, solely directed against the former, and no attempt was made to return the land fire, it being felt that unless the ships could be crushed all was lost.

Hour after hour passed with no apparent diminution in the vigour of the bombardment on either side, and although the determination of the besieged never for one moment gave way, it was clear that unless some change occurred before long their doom was sealed. At length, late in the afternoon, a shout from the King's Bastion proclaimed good news. A column of smoke was seen to rise on board the flag ship, and this, in spite of all the efforts of the crew, increased steadily in intensity. Loud rang out the stirring British cheer, and the wearied gunners redoubled their efforts. Before long a second and then a third ship took fire, and this was followed by others, until most of them seemed enveloped in flames. Their fire was now greatly diminished, and at this critical juncture the exhausted gunners of the garrison were relieved by sailors, who, coming fresh on the scene, gave the attacking squadron no respite. The fire was kept up during the greater part of the night, and all attempts to extinguish the flames on board the ships were in vain. At about 5 o'clock on the morning of the 14th the first of them blew up, and this was speedily followed by a second.

The most gallant efforts were then made to rescue the unfortunate crews by the British sailors. They succeeded at great risk to themselves in saving a large number, and brought them ashore, some being grievously wounded. Many, however, perished, and the scene in the bay was most heart-rending. By eleven o'clock three more ships had blown up, and three others were burnt to the water's edge, their crews having succeeded in flooding the magazines. The other two the garrison hoped to be able to

save as trophies; but this was not to be, and they both were eventually destroyed.

The action was now over—the stupendous efforts made by the combined fleets and armies of the allies had failed, and the siege was once more left to drag its weary length along.

The following account of the bombardment, and of the events immediately preceding and following it, is given in a letter written by General Green to his son-in-law, begun on September 20th, and finished on October 18th, 1782. The first part of the letter appears in narrative form, and is written by a clerk; but General Green has headed it and concluded it with his own hand, the portion written by himself being evidently that dated October 18th. The first part of the letter runs thus:—

"My dear Nicols

"Ever since May and June last the Enemy have been perceived to make the most active, extensive, and formidable preparations possible for a Violent and Vigorous attack of this Place both by Sea and Land. Their Ten Great floating Batteries (or Ships fortified and converted into such) were commenced upon at Algeziras about the middle of May, and seemed to be got all perfectly ready about the 1st of September, as was every other preparation by Sea, including 3 Bomb Ketches, 16 Gun Boats, 8 Mortar Boats, 16 Large Boats with Mantelets across their Bow to let down with a hinge for the easier disembarking of Troops, besides about 2 or 300 Boats brought from the adjacent Coasts to assist in throwing Troops ashore, and other occasional movements peculiar to such attacks, besides a kind of floating Battery or Fort of a particular construction, which I took to be intended for our shallow waters in order to perfect those Breaches which they imagined (or had planned) were to be first opened by their Large floating Batteries. The whole of this Sea attack, as we thought, was to be supported by 9 Line of Battle Ships (7 Spanish and 2 French) and which had been in the Bay for some time. And *with them only* on the 9th and 10th Instant made a Flying irregular Attack upon our Southern Defences, which was answered by such of our Batteries as could properly bear upon them, but without any material effect or damage on either side.

"On the 8th September We set on fire by the means of Redhot Shot their most centrical Battery upon the Isthmus, called by them the Mahon Battery of 6 Guns, besides a Battery of two Guns just finished adjoining it, notwithstanding all their possible endeavours to prevent it, in which they lost some men.

"On the 9th September The Duke de Crillon opened all his new Batteries at Sunrise, The Chief of 64 Embrazures, besides his Four new Mortar Batteries, All which were keeped playing chiefly upon our Works upon the Northern Fronts, the 9th 10th and 11th rather with great activity and Violence. But on the 12th to our great astonishment in come their Grand combined Fleet, and anchored at the head of the Bay, consisting of 41 large Ships, 7 of which are three Deckers, and now, conjointly

with the foregoing 9, makes 44 of the Line and about 6 Fiftys, in all 50—A formidable Fleet, you'll say, and commanded by Eight Admirals.

"About the 15th August arrived in their Camp to serve as Volunteer The Count D'Artois, one of the French King's Brothers, and the Duke de Bourbon, Son (I believe) to the Prince of Condé, and towards the 10th September arrived a great deal of Spanish and French Nobility and Gentry to see GIBRALTAR knocked to pieces and swallowed up, and accordingly, as we suppose, everything being ready on the 13th September (the day after the arrival of their Grand Fleet). About seven in the morning their Ten large floating Batteries were perceiv'd to be under Sail, and it was soon conjectured, intended to bear down and attack the Garrison, And by ten O'clock, anchored, as we judge, in their appointed Stations, and the Southernmost not a great way to the South of the King's Bastion, off Columbine's Parade, And the Northernmost a little to the Southward of the Old Mole Head. They immediately began a furious well served Cannonade upon our Sea three fronts, between the King's Bastion and the North Bastion including the Montagu, and the Prince of Orange's Bastions. Five of their Batteries were constructed upon two Deckers and five upon single Deckers, in all about 144 Pieces of Artillery, besides from 4 to 7 Spare Guns in each, making 43 more, in all 187 exceeding fine Guns, all cast on purpose. They were immediately answered in full as lively and active a manner from all our prepared Batteries that could properly bear upon them, but with much more Judgment, precision, and execution, particularly from our Redhot Shot with which we plied them most amply and efficaciously, together with our Shells from Mortars, Howitzers, and from 24 and 32 Pr Guns, insomuch that rather early in the afternoon we could perceive some of them by the Issues of Smoke seemed internally to be on fire, and as if some lurking Embrios of Fire were labouring to burst forth, which notwithstanding all their visible efforts to extinguish Two of them actually did flame out about Midnight, and before daylight 5 more were on fire and before twelve at Noon next day two more were on fire, And the last and Tenth was set on fire by Ourselves. As by daylight the Enemy had abandoned the whole except 340 Privates and 9 Officers, which were left behind, so that by four O'Clock in the afternoon of the next day, or in about 32 hours after they drew up before our Walls, this truly formidable ARMADA was annihilated. Seven of them, when the fire approached their Magazines, blew up, with an awful and tremendous Explosion, to our great Joy and satisfaction, particularly as they had neither in their attack nor explosions done our Works or Batteries any very great damage, comparatively speaking, for such a long and violent effort, powerfully supported during all the time of this Sea Attack with a very heavy fire from all their Batteries upon the Isthmus, as already in some degree described.

"The expence of Time, Labour, Materials, and Money to fit out this ARMADA exceeds all description, as They pretended to be so Constructed and fitted out that they should be entirely proof against Shot, Shells, Fire, and not to be Sunk, but our well plied Redhot Shot &c soon convinced

them of their Error, and it was perceivable that Even so Early as about five in the Afternoon they began to slacken their fire, and to be in some confusion at the apparent danger which seemed to threaten them. When they saw that their Darling and so much boasted Batteries, with which they had so long denounced the Destruction of this Place, would infallibly be soon on fire, and in a little time after some of them on Board (nay I believe a great number) began to apprehend their growing danger, and before midnight began seriously to think of their safety and escape by making many repeated signals of distress, and to call for their Boats from their Fleet and Shore, which immediately put off and came to their assistance, and to take away as many as danger, confusion, and time before daylight would allow of, but before the dawn of day, long, Our 12 Gun Boats commanded by Brigadier Curtis* was alongside several of them, tho' then Burning, and consequently at great risk of himself and People brought away the 340 Prisoners and the 9 Officers, who I think, but for Commodore Curtis's enterprising humanity must have all been sacrifised, for while he was alongside two of them on fire they successively blew up, he very narrowly escaping, his own Coxswain being killed in the Boat.

"In the attack of the 13th we lost Captain Reeves of the Royal Artillery Adjutant, Two Serjeants and 11 Privates killed; Wounded 5 Officers, 3 Serjeants and 81 Privates. Officers wounded: Captain Groves and Seward Royal Artillery, Capt. McKenzie 73rd, Lieut. Whitham 58th, and Lieut. Godfrey, Royal Artillery. Our Corps of Artillery, I think, gained the greatest honour that day, and the effect of the power of our three new additional Works, which to my astonishment being the Points they attacked, actually taking the Bull by the Horns, viz. The King's, The Prince of Orange's, and the Montagu Bastions, together with their intermediate Curtins, was universally acknowledged to be very conspicuous and efficacious, particularly the King's Bastion, opposite to which the Spanish Admiral and Commander of the Armada drew up."

The remainder of the letter is in General Green's own hand, dated October 18th, and is as follows:—

"Between the 10th and 11th inst. a Storm of Wind arose, which proved very detrimental to the Combined Fleet then anchored in this Bay, & drove upon our Coast the St Michael Spanish man of war of 72 guns, wch became our Prise and is got off and the Crew prisoners. Several were disabled and some drove on Shoar. Had it lasted three hours longer I suppose 6 or 8 of the Enemy's Principal Ships of the Fleet would have been on Shoar, and behold in the Evening of the 11th comes our Fleet and Convoy under Lord Howe; the enemy's Fleet next day went out of this Bay (44 of the Line), and we expected next morning at farthest a general Sea Engagement from such a magnificent Superiority. But to what attribute to it (*sic*) I know not, there has been no Engagement; the

* Captain Curtis, R.N., who was placed in command of the Marine force which had been organized on shore. He received the rank of Brigadier-General for the purpose.

Convoy is now (18 Octo^{r}) coming in, to the Immortal Honour of Lord Howe, in my Judgement, who has never been out of sight of this Rock, the Enemy's 44 having had the weather Gage of his Lordship's 34, but it would seem they did not chuse to engage.

"Yours I have received of the 12^{h} July. My sisters of July 22nd and Aug^{t} 26th, M^{r} Nicols of 17 July, Tell them all, the family and friends, I am well but cannot write to them at present (18th Octo^{r}). I approve of Charlotte's going to Mrs" (name illegible) "God Bless you in the greatest of hurrys, for ever Yours most Affectionately "W. GREEN."

At the beginning of the letter, in the space at the top, is in General Green's handwriting :—

"You see my hurry in my Conclusion. The Convoy come in—the Cork ships annihilated, Lord Howe Master of the Gulf & Bay, and the British Colours flying upon this Fortress."

From this time all interest in the drama ceases. The siege was protracted still for many months, but all heart had been taken out of the efforts of the allies. The bombardment continued sullenly, with varying intensity, and casualties every now and then occurred in consequence. Lord Howe had brought with him the 25th and 59th Regiments, which were disembarked to swell the numbers of the garrison. The magazines and store houses were at the same time fully replenished.

"Our Engineers continued to be constantly engaged. The rebuilding of the whole flank of the Prince of Orange's Bastion, a hundred and twenty feet in length, with solid masonry (which was now nearly finished) in the face of such powerful Artillery can scarcely be paralleled in any siege."—(Drinkwater, November, 1782.)

Everyone, however, felt that the crisis was past, and it was a mere question of time when the siege would be abandoned. At length, on February 2nd, 1783, the welcome news arrived that the preliminaries of a general peace had been signed, and that the siege of Gibraltar was at an end.

Then followed the rewards of a grateful nation for the men who had so long and so steadily maintained the honour of their flag, and had enabled Great Britain to retain her grasp on the key of the Mediterranean. The Governor was created Baron Heathfield, with a handsome pension, after having been made a K.B. General Green received the second highest reward, viz., a baronetcy, and General Boyd was made a K.B. Thus the two principal honours fell to the Engineers, and never were men more deserving of their laurels. The thanks of both Houses of Parliament were voted, that of the House of Lords being "To the officers, soldiers, and sailors lately employed in the defence of Gibraltar," and that of the House of Commons "To Lieutenant-General Boyd, Major-General

De La Motte" (commanding the Hanoverian Brigade), "Major-General Green Chief Engineer, Sir Roger Curtis, Knt., and to the officers, soldiers, and sailors lately employed in the defence of Gibraltar."

During the siege 43 men deserted to the enemy. All the corps in garrison furnished their quota to this black list except the 59th Regiment, which only landed a few weeks before the end of the siege, and the corps of Soldier Artificers, who had served throughout the four years of its duration. The casualties of the latter corps during this period were 7 men killed, 40 wounded, and 23 died of sickness. Until Lord Howe's relief in October, 1782, the strength of the company had been only 114 men. Two of the ten Engineer officers were wounded, but none were killed.

Mrs. Green did not survive long enough to enjoy the title her husband had so gallantly earned. The anxieties and privations of the siege were too much for her strength, and she died shortly after her return to England.

"July 26th 1782. Heard of Mrs. Green's death by letters that came in the packet this morning. She died 21st June."—(Holloway's Journal.)

We get a good idea of the money cost of this great siege to the country in the Ordnance Branch only, from a letter written by the Master General of the Ordnance to the Commanding Engineer at Gibraltar, dated August 4th, 1784, of which the following is an extract:—

"It will be necessary that I should first acquaint you how the Grants of Parliament stand with respect to the money voted for the Ordnance Service at Gibraltar. In the beginning of 1783, when I laid before Parliament my Estimate for that year, I had to state the expenses of the Ordnance at Gibraltar in 1782" (the last year of the siege) "as follows viz—

	£	s.	d.
Pay of a Military Company of Artificers .	2,247	15	10
Augmentation to Dº raising & pay 1st Sepr to 31 Decr	1,075	16	0
Iron Ordnance, Powder, Shot, Shells & other stores sent	151,903	11	0
Expense of Transports sent to Gibraltar . .	119,303	3	1
Imprests for bills drawn by order of the Governor	51,283	9	6
Value of ships sunk by order of the Governor.	14,342	9	0
Total	340,156	4	5

"In consequence of so great a supply of Stores in the preceding year

and of Peace being re-established, I was in hopes that the following demand which I made for 1783 would have been sufficient, viz.—

Pay for a Military Corps of Artificers . .	£4,492	10	10
For a supply of Stores	10,000	0	0
To answer Bills of Exchange expected to be drawn	20,000	0	0
Total	34,492	10	10

"This sum, however, proved very inadequate, for by the time that the Estimate was delivered in this year for 1784 it appeared there had been expended for 1783 as follows:—

For Powder, Tents, and other Stores sent .	£22,188	8	4
Imprest for Bills of Exchange drawn by order of the Governor	47,550	15	1
Expenses of Transports	53,084	2	8
Total	£122,823	6	1

"The Demand for 1784 was settled by Lord Townshend as follows:—

Pay of the Company of Artificers . .	4,504	17	0
To answer Bills of Exchange	25,000	0	0

"Having no better information than his Lordship I did not alter his Estimate."

All this, it must be borne in mind, is only the expenditure of the last year of the siege for the Ordnance and Store branch, and does not include the cost of the infantry. The convoy which arrived in the first year is not embraced in the above. The expenditure in repairs and renewals to barracks, fortifications, &c., part of which was drawn for by the bills of exchange quoted above, cannot be taken at less than £150,000. Probably we shall not be far wrong in assuming that the whole cost of the siege must have reached £750,000.

In the same letter the Master-General explains why, in the Warrant just issued (in 1784), the extra pay for officers at Gibraltar was put on the same footing as home stations, and not like foreign service:—

"Inclosed I send you a Copy of His Majesty's Warrant of the 21st July, establishing several Regulations respecting the Engineers; you will find the extra Pay at Gibraltar reduced to half the Ordinary Pay. A great reduction was necessary for time of peace, and it was judged that the other advantages Officers received at Gibraltar put them on a level with those serving in other parts abroad. If the Engineers there sustain some loss of Emolument, they will find some recompense in the better footing on which they are put in point of Rank by the new Establishment contained in this Warrant."

Truly this seems but a sorry recompense to the Corps for the labours and perils of the preceding four years, and for the renown they had gained in this protracted and celebrated defence.

The subject of the siege of Gibraltar may be fitly closed by Holloway's last entries in his journal:—

"July 3rd 1783. Landed at Portsmouth.

"7th. Left Portsmouth at 10 a.m. and arrived in London at 9 o'clock at night.

"10th Wednesday. With Gen^{l} Green & Col. Phipps to Lord Townshend's Levee; afterwards to Court, where we were introduced to the King and kissed hands."

CHAPTER VI.

The War of the Spanish Succession, 1702-1713.

Formation of Train for Service in the Low Countries—Colonel Blood appointed to the Command—Engineers under him—Siege of Venloo—Blood at the Battles of Blenheim and Ramilies—His Death at Brussels—Michael Richards—John Armstrong—His Services on Marlborough's Staff—Demolition of the Fortifications of Dunkirk—Train for Cadiz—Attacks on Cadiz and Vigo—Portugal Train under Borgard—Barcelona Train—Carleton's Memoirs—Siege of Barcelona—Its Capture, and that of Valenza—Borgard Wounded and Mauclere placed in Command of the Train—Defence of Barcelona by Lewis Petit—Siege of Alcantara—Death of Mauclere—Isaac Petit killed at Alicante—New Train formed under Michael Richards—Battle of Almanza and Defeat of Galway—Defence of Denia and Tortosa—Consolidation of Trains—Capture of Minorca—Lewis Petit appointed Lieutenant-Governor, and Peter Durand Chief Engineer—Loss of Denia—Siege of Alicante—Explosion of Mine and Death of John Richards—Peace of Utrecht—Engineers in America and the West Indies.

The War of the Spanish Succession, which, as already related, led to the acquisition by Great Britain of the fortress of Gibraltar, was carried on with vigour at other points. In order to secure a more intelligent continuity, the history of the Engineers in their connection with Gibraltar has been treated without interruption throughout the eighteenth century. It is now proposed to trace the deeds of those of their number who were employed elsewhere during the same period. The most important of these services were rendered in the campaigns of the Duke of Marlborough, to which we will revert.

Even before war was declared on May 4th, 1702, a Warrant had been issued for the formation of an Ordnance Train to accompany the force then assembling for service in the Low Countries. This was dated on March 14th, 1702. Colonel George Browne was at first named for the command, but that appointment was almost immediately cancelled, and he was given a similar post in the Train formed for the Cadiz expedition. The vacancy was filled by the appointment of Colonel Holcroft Blood, the Second Engineer of Great Britain, who was at the same time made Chief Engineer of the Train. Colonel Blood at first appears to have refused to take over this command, and the Board

wrote the following letter to the Earl of Romney on the occasion :—

"We have just now received a letter from Coll. Blood, by which he refuses to take upon him the command of the Train in Holland in the manner you doth propose, which considering his station of being an Engineer upon the establishment, is of such ill consequence and so far intrenches upon your Lordship's authority, that it justly deserves the utmost punishment, and it is our opinion Coll. Blood should be forthwith discharged from any employment in the office, and some other person appointed by your Lordship to command that train. The commission you intended Coll. Blood is of the same nature as has been given by your Lordship in other cases, and cannot, as wee conceive, give any occasion to be ridiculed or laughed at, and certainly Coll. Blood making that interpretation of it is a high reflection upon your Lordship and the Board." —(Lett., Mast.-Genl. 1700-1704, No. 3.)

It is a pity that the letter referred to cannot be traced. It can only be presumed that Colonel Blood was angry that the appointment should, in the first place, have been offered to Colonel Browne, who had been his junior as an Engineer, having served under him at the sieges of Cork and Kinsale in 1690.

It is somewhat difficult to trace the names of the other officers who served as Engineers throughout these campaigns, but the following appear in various minutes as having at different times been attached to the train, viz. :—De la Martinière, Charles Blunt, Henry Chaytor, Richard King, John Hanway, James Petit, Thomas Lascelles, Edward Ridley, John O'Brien, Nicholas Dubois, with Alexander Forbes as Adjutant. In addition to these, Lieutenant-Colonel Michael Richards and Captain John Armstrong, although Engineers, served on the Staff of the Army as Assistant Quartermasters-General.

The first event in the war, interesting from an Engineer point of view, was the Siege of Venloo, undertaken by Marlborough's orders, although he himself was not present. Lord Cutts had been desired to assault Fort St. Michael, a powerful detached work, which, from its dominant position, would, if taken, command the town, and probably lead to its immediate surrender. This was successfully accomplished, and Lord Cutts, in his despatch narrating the event, after enumerating his forces, which, as he says, were accompanied by 300 workmen, with a competent number of Engineers

" . . . . under Colonel Blood who acted as First engineer under Mr. Cohorne, and was to have made the Lodgment continuous. When he saw that I had quitted that design he shew'd the part of a brave officer, charging with the men sword in hand, and killing an officer of Grenadiers who made a vigorous opposition with his party. And Mr.

de la Martinière, an Engineer lately sent from England, was also very serviceable in that action as well by his skill as bravery."

This incident occurred on September 18th, 1702.

In 1705 a sum of £65,000 was ordered to be distributed to the army under Marlborough for services in the German campaign of the previous year. The following were the amounts given:—To Engineer Blood, £75; Lascelles (wounded), £33; whilst Hawkins, Chaytor, Blunt, King, and Armstrong each received £16 10s.

Holcroft Blood did not gain renown only by his performance of Engineer duties. His position as Chief of the Ordnance Train placed him at the head of the Artillery. Thus we find him at the battle of Blenheim directing the movements of that arm.

"About daybreak Colonel Blood brought up the Artillery . . . . About 8 o'clock the enemy began to cannonade our army as it advanced. Upon this his Grace ordered Colonel Blood to plant several Counter batteries upon the most advantageous parts of the ground, and His Grace visited each battery and stood by to observe the range of the guns and the effect of their fire."—(Murray, i. 396.)

Blood distinguished himself so much at the battle of Blenheim, that he was raised to the rank of Brigadier-General.

We find other records of his work about this time:—

"October 20th 1704. This day Colonel Blood is marched with 14 pieces of Cannon, 4 Howitzers, and 3 battalions of Foot towards Homburg."—(Extract from a letter written by the Duke of Marlborough to Sir Charles Hedges: Murray, i. 512.)

"October 21st 1704. Colonel Blood, our Engineer, with 18 Cannon and 3 Regiments of Foot, marched the 20th from our army, and to be followed the next day by 32 battalions and 40 Squadrons to form the Siege of Tryers, before which place the Duke of Marlborough designs to be the 28th."—(Luttrell, v. 478.)

This refers to the siege of Traerbach, which capitulated after an investment of six weeks.

Blood also commanded the Artillery at the battle of Ramilies on May 23rd, 1706, with reference to which the Board of Ordnance passed the following minute:—

"June 4th. 1706. A letter to Brigadier General Blood to thank him for his of the 23rd May, and to congratulate him upon account of the glorious victories and the many successes that has attended" (*sic*).

And again on September 12th, 1706:—

"To Brigadier General Blood to thank him for his Account of the Siege of Menin, and that he acquaint the Sub Engineers that the Board expects they should make Draughts of all Towns, Sieges, &c. in all the Campaigns they have been in."

Menin, on the Lys, a town strongly fortified by Vauban, was besieged on August 4th, Blood being in charge of the engineering operations. It was taken after three weeks' open trenches.

This is the last service in which General Blood was engaged. The army shortly after went into winter quarters, and when the uneventful campaign of 1707 opened he lay sick at Brussels, where he died on August 19th.

Meanwhile Lieutenant-Colonel Michael Richards was serving as Assistant Quartermaster-General in the army. He had been Chief Engineer in Newfoundland. On July 12th, 1703, Marlborough wrote to the Board of Ordnance—

"I am solicited in behalf of Capt. Michael Richards, now in Newfoundland, that he may have liberty to come to England for some few months by the next shipping for the recovery of his health, and if his presence may be dispensed with, without prejudice to the service under his care, I desire you will give him leave accordingly."

The leave was granted, and Richards was placed by the Duke on his staff. We only get one glimpse of him, which is contained in an extract from one of his letters, given in the Stowe Papers, dated in August, 1705:—

"I writ you from Cologne the 21st" (July) "at night of my intentions of keeping the great post to Frankfort. . . . I waited on the Prince at Swalbach. He kept me there 3 hours by long stories, by which the gates of Frankfort were shut and 'twas with great difficulty I got in . . The Prince was very inquisitive about His Grace's intentions of returning to the Moselle. . . . Mr. Stepney" (the English Ambassador at Vienna) "is so particular in what passes between him and this Court that I need not say any more. But that I found a very hearty welcome at Count Sinsendorffs the 26th and arrived just at dinner, where was Mr. Stepney among other Ministers with ladies. I had immediate audience of the Emperor, who made me recite him particulars of the action before he read His Grace's letter, to which he replied in very obliging terms, how much he was sensible of His Grace's zeal and great services towards him as well as for the Common Cause. He said his great actions brought new life to him and to these parts, and could never be forgot by him nor his. He said that all His Grace's actions were fortunate to his House, that it made the news more acceptable as it came on his birthday, and that he rejoiced with His Grace's friends that he escaped so well."

The action here referred to was the forcing of the French lines which had been constructed along the Mehaigne, near Ramilies. This had been successfully accomplished after a severe action on July 18th. Richards was at the battle, and, being on the Duke's staff, was sent with a letter announcing the victory to the Emperor Joseph at Vienna. He left the Low Countries at the

end of the campaign, and in the ensuing year was placed in command of one of the Spanish Trains, as will be seen further on.

The other Engineer on the staff of Marlborough's army, Captain John Armstrong, seems gradually to have so distinguished himself as to have brought him to the especial notice of his chief. We get the following accounts of him and his work :—

Instructions for Captain John Armstrong given by the Duke of Marlborough.

"Camp at St. Renelde, June 1st 1708, He is to repair to Coblentz and attend the Comte de Rechteren, Envoy from the States, and arrange for the march of a certain detachment of Dutch Troops."—(Murray, iv. 46.)

This is further explained in the next extract :—

"In 1708, shortly before the battle of Oudenarde, Marlborough wrote to Count Rechteren desiring him to make such movements as might draw the attention of the enemy towards the Moselle. He also despatched one of his Aides de Camp, Capt. Armstrong, who besides regulating the details of the intended march with Count Rechteren, advanced as far as Frankfort to meet Prince Eugene after his return from Vienna."—(Coxe, ii. 243.)

September 21st, 1708, Camp at Lannoy. The Duke of Marlborough to Lieutenant-General Erle. He hears that he is coming with a force to land at Ostend. Sends him—

"The bearer Capt. Armstrong, one of our Quarter Masters, an intelligent good officer, who knows perfectly well the country, and is fully instructed with my thoughts how the troops you have brought over may be most usefully employed."—(Murray, iv. 231.)

After the victory of Oudenarde, Marlborough had decided upon besieging Lille, for which purpose Prince Eugene and the Prince of Orange sat down before the place on August 13th. The difficulties of the operation were enormous, not only from the strength of the fortress and the large garrison (13,000 men) by which it was held, but also because the French army, considerably superior in numbers to that of Marlborough, lay on the Scheldt, cutting off all communication with his magazines at Antwerp. His supplies therefore had to be brought by convoy from Ostend, along a narrow causeway, exposed to the attacks of the enemy. General Erle had sailed from England with a reinforcement of 5,000 men, and, pending instructions from the Duke, had disembarked at Ostend. It was to guide him forward that Armstrong was sent there. The convoy, consisting of 700 wagons, was attacked by the French with a force of 22,000 men on September 27th. Fortunately, General Webb had been directed to protect it with 10,000 men, and after a severe battle, in which the

French loss amounted to 6,000, the convoy forced its way through, and reached Menin in safety, from which place it advanced into the confederate camp on September 30th. This gallant and skilful operation was carried out successfully under the guidance of Armstrong, and added much to his reputation.

We find no further special mention of him until the year 1711, when he was a Lieutenant-Colonel and Deputy Quartermaster-General. In the campaign of that year, Marlborough, having in the most skilful manner forced the French lines of Bouchain, besieged the fortress of that name. The trenches were opened on September 16th, and in twenty days the place surrendered.

In this siege we read—

"Colonel Armstrong, Deputy Quarter Master General, was selected by Marlborough to superintend the construction of the Lines of Circumvallation which he had ordered to be at once thrown up between him and the enemy's army in the field."

And further, during the same siege, the Duke wrote to Lieutenant-General Erle, then Lieutenant-General of the Ordnance—

"Camp near Bouchain Sep^{t} 20th 1711. Lieut. Colonel John Armstrong having on all occasions distinguished himself during the war in this country, but particularly at the Siege of Bouchain, I have for his encouragement appointed him to be an Engineer upon the Establishment of the Ordnance, in the room of Colonel Michael Richards preferred, at the salary of £100 a year, to commence the 1st day of October next, and I desire you will notify the same to M^{r} Secretary S^{t} John in order to his having the necessary appointments."—(Murray, v. 503.)

The preferment of Colonel Michael Richards was his appointment to the post of Chief Engineer of Great Britain, with reference to which we have the following letter from Marlborough to Erle, dated Camp at Avesne le Sec, August 17th, 1711:—

"The place of First Engineer having been long vacant" (since the death of Sir Martin Beckman in 1702) "I know none whose pretensions stand so fair for it as Colonel Michael Richards, who having served long and had a good deal of experience, I should be glad you would take the proper method of writing to the Secretary of State to move Her Majesty to bestow this employment upon him."—(Murray, v. 461.)

The result of this letter was that Richards was made Chief Engineer on September 11th, 1711.

The capture of Bouchain was the last exploit of the British army under Marlborough. He was recalled in disgrace in October, and the command given to the Duke of Ormond, who received secret instructions not to enter into any serious engagement against the French. At this time much negotiation was going on with a view to terminating the war, and, although peace

was not absolutely proclaimed until 1713, under the Treaty of Utrecht, the British Government had evidently determined not to prosecute further hostilities. The French, on their side, had offered to surrender Dunkirk to the English as a gage of good faith, and this fortress was taken possession of by a body of troops, under General Hill on July 7th, 1712.

One of the conditions of the Treaty of Utrecht was the demolition of the fortifications of Dunkirk. Colonels John Armstrong and Thomas Lascelles were appointed to superintend the operations, and with reference to this service we find the following record in the Ordnance Minutes :—

"October 2nd 1714. That Bills be allowed to Colonels John Armstrong and Thomas Lascelles for their services as Engineers appointed to see the Demolition of Dunkirk, viz. Colonel Armstrong from July 31st 1713 to September 30th 1714, 426 days at 20/ a day £426. Colonel Lascelles, October 20th 1713 to Sepr 30th 1714, 345 days £345."

After some years had passed by, the inhabitants of Dunkirk began to think they might repair as much of the damage that had been done in carrying out these demolitions as would restore the navigation. There were, however, keen eyes on the watch, and, before much had been effected, an outcry was made. In a curious little pamphlet, published in 1732, entitled "The Danverian History of the Affairs of Europe for the memorable Year 1731," this matter is fully discussed, and we there read that—

"The Dutch Ambassador himself visited it the Summer before and made proper Representations of it to the States General and to our Court, who also a year before the Craftsman began this Clamour" (a rival paper which in its attacks on the ministry accused them of culpable negligence in this matter) "had sent Col. Armstrong, Surveyor General of the Board of Ordnance" (he at this time held that office in conjunction with that of Chief Engineer), "to view it, and so long ago as Febr 1730."

We also read in an extract of a letter from Dunkirk, dated December 17th, 1730—

"Col. Lascelles, the British Commissary for inspecting the Demolition of our new Works erected by our Burghers, came hither about the middle of March last and met here the Chevalier Blandiniere, who was appointed by the Most Christian King to execute his Order of the 27th of Feb. last for that Demolition, and was lately arriv'd from Paris. After some time had been spent in viewing these Works and debating what was to be razed the Demolition began, but not being carry'd on to Col. Lascelles's Satisfaction Representations were made to the French Court. Whereupon M. de la Blandiniere was sent for thither about the End of June, and M. Segent, Commissary of War and Engineer, was left here to perform that Service during his Absence, who having receiv'd fresh Orders from Court, the Demolition of the Jettees erected by the Inhabitants on both Sides the Chenal of Dunkirk was carry'd on with great

Application and Dispatch, under the joint Inspection of M^r^ Lascelles and M. Segent, and they were entirely razed to the Level of the Strand, and the whole Work finish'd in the Beginning of the last Month to the full Satisfaction of Col. Lascelles (the British Commissary)."

We will now revert to the events that took place in Spain and the Mediterranean during this war. On April 6th, 1702, a Warrant was issued for an Ordnance Train to accompany the expedition to Cadiz under the Duke of Ormond and Admiral Sir George Rooke. The command of this Train was in the first place given to Colonel George Browne, who, as already stated, was removed from a similar post in the Holland Train for the purpose, but he died before the expedition sailed. The command was then given to Colonel Peter Carles, who already held the appointment of Chief Engineer to the Train. We get a contemporary view of the character and attainments of Carles in the following extract from the journal of Colonel John Richards, second in command of the Portuguese Train in 1704 :—

"I wonder not at all that a man should have a natural inclination to one of his own country, his own religion, and a sufferer in the same circumstances. My Lord Galway is remarkable, and indeed I think very recommendable for his great regard to the French gentlemen refugees" (*i.e.* Huguenots) "which rather seems charity than friendship, for his sun shines upon all sorts of people, as well the unworthy as the worthy. Among the rest none was more distinguished than Colonel Carles, a Person who in my judgment deserves a much better character than is commonly given him by our English, and falls much short of the opinion which some of his countrymen would have of him. My Lord Galway was one of them. He gave him a great part of his confidence, he left nothing undone to procure him a better Establishment from the Board of Ordnance than what those gentlemen were inclined to give him, and so well did he recommend him to the Court of Portugal that they thought there was no making of war without him. They made him Quarter Master General of the Army, but I know not how they came to keep him Engineer in Chief, except it were by the enemies he made himself in his employment of Quarter Master General, when he disgusted several persons of quality by his rash and indiscreet conduct. This gentleman has had since the vanity to brag of the great hand he had in the resolutions which were taken the last winter about summer operations, but truly the disposition that was made to go through with them was so poor that neither he nor anybody else that had a hand in it can pretend to have gained much credit thereby."—(Richards' Papers, xxi. 132.)

John Richards, the writer of the above, and brother of Jacob and Michael Richards, though not, like them, an Engineer, was a Roman Catholic, hence the animus which seems to show out in parts of this extract; Peter Carles having been, like Lord Galway, a French Huguenot.

There were altogether 16 Engineers attached to this Train (Add. MSS., Brit. Mus., 5795, fol. 201), but their names are not given. From other sources the following can be traced as having been among the number, viz., David Sherrard, Lewis Petit, Isaac Francis Petit, Lewis Borgard, John Mauclere, James Wybault, Joseph Bennet, John Thernas, Francis Hawkins, and Lucas Boitout (Muster Rolls, Tower, 1702; and Boyer, "Annals of Queen Anne," 1702).

The Cadiz expedition did not do much. The fleet of 160 sail, English and Dutch, and the land force of 10,000 men under the Duke of Ormond, sailed from Spithead on July 12th, and on the 21st anchored outside the Bay of Bulls, near Cadiz. A reconnoitring party, consisting of Colonel Carles, the Chief Engineer; Colonel Sir Thomas Smith, the Quartermaster-General; and Lieutenant Cows, R.N., was sent to select a point for debarkation. They reported that along the outer side of the Isle of Leon (on which the town stands) were three bays, "very proper to make a descent in." Their opinion was overruled by the council of war which was held on their return, and it was decided to land in the Bay of Bulls. This was done on the 26th, and the coast town of Rota promptly surrendered to the invaders. They afterwards proceeded to attack the fort on the Matagorda peninsula. Carles, with a body of 2,400 English and Dutch, under the command of Baron Sparr, opened trenches on August 5th; and by the 13th, having constructed one battery for four guns and another for four mortars, opened on the fort. After three days' fire, the gun battery, which was situated on marshy soil, began to subside; whilst the approaches, which had been advanced to within 140 yards of the place, were knee deep in mud. The attempt was therefore abandoned. After some delay caused by a discussion as to whether the town of Cadiz should be subjected to a bombardment, to compel a surrender, the troops were re-embarked and the project given up.

The next operation was an attack on Vigo, where a convoy of treasure from South America was lying, covered by the French and Spanish fleets, which were moored in the harbour and protected by a strong boom. The attack was successful; the fleets were destroyed or captured, and the treasure, amounting to six millions of dollars, secured. There are no records to show what share Colonel Carles had in the affair, but, as Ormond landed with 2,500 men and took the fort which guarded the passage into the harbour, we may fairly assume that he assisted at the operation.

In 1703, the King of Portugal, who had at first been inclined to side with the French and Spaniards, changed his views, and concluded an alliance with Great Britain, by which he undertook to

receive a combined British and Dutch force into Portugal, and to furnish 28,000 troops of his own to act with them. In order to carry out the object of this treaty, an Ordnance Train was assembled by Warrant, dated July 24th, 1703. Of this Train, Colonel Albert Borgard was made Commandant. He was at this time borne on the list as an Engineer, but he never appears to have acted in that capacity in the British service. He had been Adjutant of the Train at the close of the previous century, but on its suppression, shortly after the peace of Ryswick, he was given the appointment of an Engineer on the establishment, apparently only with a view to reward him for his past services, and to retain him in the British army. Colonel Carles was made Chief Engineer of this as well as of the Cadiz Train, and under him were the following Engineers, viz., Captains Lewis Petit, John Mauclere, John Massey, Joseph Bennet, Lucas Boitout, James Petit, and Lieutenant Pierre de Gually.

We have seen in a former chapter that after the capture of Gibraltar a Train was sent to that fortress under Talbot Edwardes. Joseph Bennet had been already despatched thither by the Earl of Galway, and Edwardes took with him Lewis Petit and John Massey, who were also lent from Borgard's Train. Talbot Edwardes and Lewis Petit were recalled from Gibraltar shortly after the termination of the Franco-Spanish siege; the former to proceed to England, and the latter to act as Chief Engineer of the Barcelona Train. The Warrant for this Train was dated April 12th, 1705. The other Engineers attached to it were Captains John Hanway, Thomas Phillips, and Theodore Collier, the latter of whom was Adjutant. There were therefore now three distinct Trains in the Peninsula, viz., that for Cadiz, commanded by Borgard; that for Portugal, by Peter Carles; and that for Barcelona, by Colonel John Richards.

The Barcelona Train was augmented in 1706, and several changes made in its constitution. Collier was promoted from the Adjutancy to be Major and second in command under Colonel John Richards; and two additional Engineers, Alexander Forbes and James Johnson, were attached to it. The new Adjutant was not an Engineer. Shortly afterwards, Colonel Isaac Petit also joined it, as we read in the following Ordnance Minute:—

"That a letter be writ to My Lord Peterborough recommending to him Colonel Petit, who is Lieut. Colonel, to My Lord Mohun's Regiment, which is coming to Catalonia, that if any vacancies of Engineers fall His Lordship will please to appoint him to succeed."—(March 12th, 1706.)

It is doubtful whether he was taken on as an Engineer, as he was killed before the close of the year at the siege of Alicante.

The principal interest connected with the Engineer service in the Barcelona Train gathers round Captain George Carleton. In the year 1728 there was published in London an autobiographical work, entitled "The Military Memoirs of Captain George Carleton, from the Dutch War, 1672, in which he serv'd, to the Conclusion of the Peace at Utrecht, 1713." Much discussion has arisen as to the authenticity of these memoirs.

On its publication the book seems to have carried but little weight, and it was not until Dr. Johnson, in 1784, noticed it for the first time, that attention was drawn to it. Following his example, Sir Walter Scott, in 1809, edited the book, and introduced it to the public as a fragment of genuine military biography. From this time forward for some twenty years it was accepted as authentic, and the various historians of the epochs referred to by Carleton adopted his statements more or less completely. In 1830, Walter Wilson, in his "Life of De Foe," attributed the memoirs to that author as a romance, conceiving that the similarity of his style to that of the supposititious Carleton was a sufficient evidence of his hypothesis. In this he was followed, some seven years later, by Lockhart, in his "Life of Sir Walter Scott." From that time until recently the work has been condemned as a piece of fiction as strongly as it had been accepted for authentic history previously. Circumstances have of late years been traced which prove that the book, if not, strictly speaking, genuine, is at all events based on incidents in the life of a real person.

Parnell, in his "History of the War of the Succession in Spain," thus sums up an elaborate investigation into the question:—

> "However, the identity of the writer, though of literary interest, is not a matter of much historical importance, and perhaps will never be irrefutably established. What is certain about the work is, first, that it is not the *bonâ-fide* memoirs it professes to be; secondly, that its version of events connected with the War in Spain is intentionally untrue; and thirdly, that for eighty-five years after its appearance it was ignored by all historians."

Granting that the narrative of the War is intentionally distorted in order to glorify the Earl of Peterborough and to asperse the memory of numerous other officers, still, as Carleton unquestionably did exist, and did serve in the position he describes during the Spanish War, his narrative is interesting from an Engineer point of view, as the details he gives of that branch of the service may be more or less taken as true and unbiassed. The names of the Engineers in the Train, when mentioned by him, are always correct, although he nowhere alludes to them specifically as Engineers. We, moreover, find traces of Carleton in the Ordnance Minutes

and elsewhere which tally precisely with his account of himself. Although not originally attached to the Train in the capacity of an Engineer, he seems almost from the first to have been employed as such. In his address "To the Reader" it is stated—

"Our Author having obtain'd by his long Service some Knowledge of the pratick Part of an Engineer, and seeing at that critical Time the great Want of such, readily acted as one, which gave him the greater Opportunity of being an Eye Witness of his Lordship's" (the Earl of Peterborough) "actions, and consequently made him capable of setting them forth in these his Memoirs."

In the book itself he states how he first came to turn his attention to Engineering :—

"The War thus ended by the Peace of *Nimeugen*, the Regiment in which I serv'd was appointed to lie in Garrison at the *Grave*. We lay there near four years, our Soldiers being mostly employ'd about the Fortifications, and the pratick Part of an Engineer which in my more advanced years was of no small Service to me."

The early part of the siege of Barcelona did not present any details interesting to the Engineer. After much delay the fort of Montjuic was captured, Prince George of Darmstadt losing his life during the operation, and it was not until after this event that the Engineers were able to break ground and erect their batteries for the purpose of breaching the enceinte of the town. The following description is given by Carleton of this stage of the siege, and it bears the stamp of truthfulness in its main points, though, perhaps, slightly boastful as regards his own doings :—

"The Fort of *Monjonick* being thus surprizingly reduced furnish'd a strange Vivacity to Mens Expectations and as extravagantly flattered their Hopes." . . . . "Accordingly every Body now began to make his utmost Efforts, and look'd upon himself as a Drone if he was not employ'd in doing something or other towards pushing forward the Siege of *Barcelona* it self, and raising proper Batteries for that Purpose" . . . . "Captain *Littleton* in particular, one of the most advanc'd Captains in the whole Fleet, offer'd of himself to take care of the Landing and Conveyance of the Artillery to the Camp. And answerable to that his first Zeal was his Vigour all along ; for finding it next to an Impossibility to draw the Cannon and Mortars up such vast Precipices by Horses if the Country had afforded them, he caused Harnesses to be made for two hundred Men ; and by that Means, after a prodigious Fatigue and Labour, brought the Cannon and Mortars necessary for the Siege up to the very Batteries. In this Manner was the Siege begun, nor was it carry'd on with any less Application ; the Approaches being made by an Army of Besiegers, that very little, if at all, exceeded the Number of the Besieg'd, not altogether in a regular Manner, our few Forces would not admit it ; but yet with Regularity enough to secure our two little Camps

and preserve a Communication between both, not to be interrupted or incommoded by the Enemy. We had soon erected three several Batteries against the Place, all on the West Side of the Town, *viz* one of nine Guns, another of Twelve, and the last of upwards of Thirty. From all which we ply'd the Town incessantly, and with all imaginable Fury and very often in whole Vollies. Nevertheless it was thought not only adviseable but necessary to erect another Battery, upon a lower Piece of Ground under a small Hill; which lying more within Reach, and opposite to those Places where the Walls were imagin'd weakest, would annoy the Town the more; and being design'd for six Guns only, might soon be perfected. A *French* Engineer had the Direction and indeed very quickly perfected it."

Carleton does not inform us who this French Engineer was. It could not have been Lewis Petit, who was not French, and whom he mentions further on. In all probability it was Carles, who commanded the Cadiz Train. He was the senior Engineer in the Peninsula at the time, and might very probably have visited the expeditionary force whilst engaged in the siege. It has already been stated that he was a French Huguenot.

"But when it came to be consider'd which way to get the Cannon to it most were of opinion that it would be absolutely impracticable by reason of the vast Descent; tho' I believe they might have added a stronger Reason, and perhaps more intrinsick, that it was extremely expos'd to the Fire of the Enemy. Having gained some little Reputation in the Attack of Monjouick, this Difficulty was at last to be put upon me, and as some, not my Enemies, suppos'd more out of Envy than good Will. However, when I came to the Place and had carefully taken a View of it, though I was sensible enough of the Difficulty, I made my main Objection as to the Time for accomplishing it; for it was then between Nine and Ten, and the Guns were to be mounted by Daylight. Neither could I at present see any other Way to answer their Expectations, than by casting the Cannon down the Precipice, at all Hazards to the Place below, where that fourth Battery was erected. This wanted not Objections to; and therefore, to answer my Purpose as to point of Time, sixty men more were order'd me, as much as possible to facilitate the Work by Numbers, and accordingly I set about it Just as I was setting all Hands to work and had given Orders to my Men to begin some Paces back, to make the Descent more gradual and thereby render the Task a little more feasible, Major *Collier* who commanded the Train* came to me; and perceiving the Difficulties of the Undertaking in a Fret told me I was impos'd upon, and vow'd he would go and find out Brigadier

* The reason Carleton speaks of Major Collier as commanding the Train is, that John Richards, being a Roman Catholic, was not, strictly speaking, permitted to hold the post; but he received the pay, and the officers of the Train were ordered to obey him.

Petit" (local rank had evidently been given him) "and let him know the Impossibility as well as the Unreasonableness of the Task I was put upon. He had scarce utter'd those Words and turn'd himself round to perform his Promise, when an unlucky Shot with a Musket-Ball wounded him through the Shoulder, upon which he was carry'd off and I saw him not till some considerable time after. By the painful Diligence and the additional Compliment of Men, however, I so well succeeded (such was my great good Fortune) that the Way was made, and the Guns, by the Help of Fascines and other lesser Preparations below, safely let down and mounted; so that that fourth Battery began to play upon the Town before Break of Day; and with all the Success that was propos'd."

The whole of this story points to the probability of Carles having visited the works and ordered the construction of this battery. There seems to have been some jealousy in the matter, and the Barcelona Engineers were evidently ready upon small provocation to condemn the site. Carleton, although he naturally makes out the case so as to reflect the most credit on himself, does not appear to have found much real difficulty in the task of letting down the guns.

In addition to the wound received by Major Collier, as referred to in Carleton's narrative, Colonel Petit was also disabled by an injury whilst in the batteries, but was not long absent from duty.

The breach was made practicable after a few days' fire, and then the Governor, Velasco, surrendered. The siege had lasted from August 23rd to October 4th, but for the first three weeks no active operations had been undertaken; and it was not until after the fall of Fort Montjuic on September 17th that the engineering work can be said to have begun.

The capture of Barcelona was speedily followed by that of the city of Valencia, together with many other places of minor importance, so that the whole of the provinces of Catalonia and Valencia fell into the hands of King Charles and his British and Dutch allies.

Meanwhile, efforts had been made to advance the cause in the west, and the Cadiz Train under Borgard, with Carles as Chief Engineer, was fully employed. Its first movement was for an attack on Valenza, which began on May 2nd. In three days the Engineers had thrown up their batteries, which began at once to play on the face of one of the bastions. On the 8th the breach was stormed and the place taken. In this siege Borgard was wounded, losing his left arm, in consequence of which he was compelled to relinquish the command of the Train. The vacant post was conferred on Lieutenant-Colonel Mauclere, a Queen's Engineer, who, like Carles, was a Huguenot. On June 12th the Board of Ordnance wrote to Mauclere—

"As regards the 8 Gunners sent by the Prince of Hesse to supply the Train in Portugal, that a letter be writ to M^r^ Mauclere Engineer about the said Gunners, to the same purpose and to approve of his keeping them sober. The Board are sorry that Colonel Borgard and others of the Train are wounded."

Apparently, Mauclere did his work well in his new position, as we read in a memorandum dated October 14th, 1705—

"That a letter be writ to Lieut. Colonel Mauclere that we have received his of the 15^th^ August from Beja, and are very well satisfied with his conduct in the management of the Train."

On the same day that the first of these minutes was written, another emanated from the Board, placing Colonel Carles on the establishment of Queen's Engineers—

"That a letter be writ to My Lord Galloway, Captain General of Her Majesty's Forces in Portugal, to acquaint him that since he believes Colonel Carles may be of great service the Board concur with him in making him *Engineer*, in the room of Captain La Mott deceased."

After the capture of Valenza, Albuquerque was besieged. In this attack the name of Joseph Bennet occurs. On the arrival of Talbot Edwardes at Gibraltar to assume the post of Chief Engineer, Bennet's position there became anomalous. He had been sent to take the command by Galway, on account of the emergency, and without instructions from the Board of Ordnance. Edwardes having superseded him, he returned to his normal position in the Portugal Train; and at the siege of Albuquerque, between April 16th and 20th, he took charge of the engineering operations. We read of his driving a mine under the works, and of his being wounded.* On the 20th the place was captured, and then arrangements were made for the siege of Badajoz. Differences of opinion on the part of the allied commanders led to its postponement till the autumn, and when it was attempted in October it failed, Lord Galway having been severely wounded by a round shot, which shattered his right hand. Nothing further was accomplished by the Portuguese Train during the remainder of the year.

As soon as Barcelona had been captured and the neighbouring provinces had declared for King Charles, Lord Peterborough proceeded to Valencia. It was about this period that the following incident, as narrated by Carleton, must have occurred—assuming that it is not a myth. Peterborough did not bear a very good name on the side of his moral character, and there is no inherent

* Bennet shortly afterwards returned to Gibraltar as Chief Engineer.

improbability in the tale, which is worthy of rescue from oblivion, if only for the quaint simplicity with which it is told.

"While we stay'd at *Huette* there was a little Incident in Life which gave me great Diversion. The Earl, who had always maintain'd a good Correspondence with the fair Sex, hearing from one of the Priests of the Place That on the Alarm of burning the Town one of the finest Ladies in all *Spain* had taken Refuge in the Nunnery, was desirous to speak with her.

"The Nunnery stood upon a small rising Hill within the Town; and to obtain the View the Earl had presently in his Head this Stratagem: he sends for me as Engineer to have my Advice how to raise a proper Fortification upon that Hill out of the Nunnery. I waited upon his Lordship to the Place, where declaring the Intent of our coming, and giving plausible Reasons for it, the Train took, and immediately the Lady Abbess and the fair Lady came out to make Intercession That his Lordship would be pleas'd to lay aside that Design. The divine Oratory of one and the beautiful Charms of the other prevail'd, so his Lordship left the Fortification to be the Work of some future Generation."

The loss of Barcelona had been much felt by the King of France, and he took early steps to recover the fortress as soon as the general condition of the campaign admitted of a powerful advance. By his orders, Tessé, who commanded in Estremadura, moved by Madrid towards the place from the west; whilst Légal advanced on it from Roussillon. At the same time a numerous fleet had assembled at Toulon, and was ready to act in conjunction with the land forces, and supply them with the necessary *matériel* for a siege. These combined movements were very skilfully effected, and on April 2nd and 3rd, 1706, Barcelona was surrounded.

At this time the Governor of the place was Count Uhlfeldt, who had been raised to the rank of general, and appointed to that post by King Charles, who himself was also present. The regular garrison consisted of 1,400 men, of whom 300 were English, with a small Train under Lewis Petit. In addition, however, to these were 1,500 Spanish militia and 5,000 townspeople, who were enrolled for defence in companies.

"The Chief Engineer was Colonel Petit, and owing to his exertions the fortifications were in an efficient condition, whilst the place was well provided with guns, ammunition, and defensive *matériel*. At Montjuic the half-formed outworks had been completed into a good line of bastioned fortification, with ditches, covered way, and glacis; whilst in front of a demi-bastion on the west a small lunette had also been thrown up. On the new ramparts several guns had been mounted, and the old fort formed a strong keep to the main line of defence thus created in advance. Moreover, between the fortress and Montjuic, in substitution

for the small detached work of St. Bertran, which had been demolished, a continuous line of intrenchment with a palisaded ditch had been constructed."*

Two days after the investment the garrison was augmented by 1,800 men, who eluded the blockade of the French fleet, creeping along the coast in boats, and landing at the place without the loss of a man. On April 6th, trenches were opened against Fort Montjuic, and from that moment the siege was pushed forward with the utmost vigour. The advanced lunette was captured on the 15th, and a lodgment on it converted into a five-gun battery Twenty-five guns and four mortars were now playing on Montjuic, and two large breaches were the consequence—one in the western demi-bastion, in front of which the lunette had been thrown up, and the other in the central bastion. Whilst this attack was progressing, the French had opened trenches against the fortress itself, and thrown up an eight-gun battery, which opened fire on the 19th. At the same time the ships began to bombard the town. On the 21st the enceinte of Montjuic was stormed and captured. Four days later the keep was abandoned by its defenders, having become no longer tenable, and the besiegers were from that time able to concentrate their efforts against the town itself.

By the 28th eighteen guns were playing on the St. Antonio bastion and the curtain to its left, where two breaches were soon formed. Petit, who was generally considered the soul of the defence, now constructed retrenchments to isolate the weak points. Fortunately for the garrison, Renaud, the French Engineer, who was so ably conducting the siege, was killed, and this casualty had a very prejudicial effect on the attack. On May 3rd the besiegers began mining operations with a view to enlarging the main breach, but Petit met them with countermines, blew in their galleries, and checked the subterranean advance.

Matters were now very critical, and there is little doubt that had a determined assault been delivered the place would have fallen. Most fortunately, on the 8th, Sir John Leake arrived with a relieving squadron, on which the French fleet hurried away from the scene of action and escaped to Toulon.

Tessé, the commander of the land forces, finding himself isolated and left without a base, struck his camp on the night of the 11th and raised the siege, leaving the whole of his train and 900 sick behind him. The success of this defence brought great credit to Petit, to whose persistent gallantry and engineering resource it was largely due.

* Parnell's "War of the Spanish Succession," pp. 154, 155.

The King wrote the following letter to Queen Anne on the subject:—

"Sister. M^dm "Barcelona 29^th May 1706.

"I owe a great deal of obligations to all y^e officers and private men of Your Maj^tys that have assisted by Valour in defending this Capital, but I have a particular Obligation to Coll^s Petit and Duterme for having put the Fortifications of Monjou and of this Capital into such a Condition of Defence, which gave time till the Arriving of the Fleet. The Zeal and Application both the said Coll^os have shewn during the whole seige has been so extraordinary and that service so important that they have done me on this occasion I should wrong Your Ma^tys generosity if I did not recommend them to Your Clemency. I beg to be persuaded that I take part in everything that will be done in their behalf. The greatest Obligation will be to confirm at the Board of Ordnance Collon^l Duterme Lieu^t Coll^l of the Trayne of Artillery, according to the Date of his Comission from the Earl of Peterborough (being from the 28^th Oct^r 1705).. And that he and Coll^l Petit and their Familys may enjoy the benefit of Yo^r Justice and Generosity that are us'd to those that distinguish themselves in my Service and in that of the Coñon cause.

"I am with eternal acknowledging Respects

"CHARLES."

—(Warr. Ord. in Co., and in W. O., vol. xix. p. 45.)

Whilst these events were proceeding in the east, Galway was advancing with the allied force of English, Dutch, and Portuguese from Portugal towards Madrid. It will be remembered that at the time of Borgard being wounded, Lieutenant-Colonel Mauclere, the Engineer, had been placed in command of the Portugal Train, Peter Carles being the Chief Engineer. Borgard, now recovered from his wound, had resumed command, and Mauclere, in consequence, reverted to his former position as Engineer under Carles. The first event of importance in the campaign was the siege of Alcantara, which was opened on April 10th, 1706, and brought to a successful issue by the capitulation of the town on the 14th. In this affair Lieutenant-Colonel Mauclere was killed, and Borgard again severely wounded, so that the command of the Train became once more vacant, as well as the post of an Engineer on the establishment.

With reference to the latter of these vacancies the Board wrote to Lord Galway on May 12th that they

"should be very ready to comply with his request in making Captain Massey Engineer on the establishment at £100 per annum, in the room of Colonel Mauclere killed, but His Grace the Duke of Marlboro' reserves to himself the disposal of such places, that according to His Lordship's desire a Warrant is now sent over for Roger Davies to succeed Colonel Mauclere in Portugal."

The command of the Train apparently remained for some time vacant, and it was not until March 20th, 1707, that Major Theodore Collier, Engineer, who was second of the Catalonia Train under John Richards, was ordered by the Duke of Marlborough to take command of the Portugal Train, "instead of Colonel Borgard." Immediately afterwards we read in minute of March 25th—

"An Imprest for £105 3 months pay advanced to Colonel Collier going as Colonel to the King of Portugal's Train."

After the capture of Alcantara, Galway pushed steadily forward to Madrid, which he entered on June 27th, and there proclaimed Charles III. King of Spain.

Whilst this movement was being made by Galway, the force which had been sent under Admiral Sir John Leake for the relief of Barcelona was employed in reducing several maritime towns in Valencia. After having secured Carthagena without firing a shot, he proceeded to Alicante, which he found prepared to resist his summons. He therefore landed his troops on August 1st, and ground was broken before the place. Colonel Isaac Petit, who was a Queen's Engineer, although not at the time employed as such, being in command of Mohun's Regiment, was the only person present capable of conducting the Engineer operations. Under his direction a battery for six guns was thrown up, and a few lines of approach pushed forward. On the 6th, fire was opened and a breach formed, which on the 8th was stormed and carried. At the same time an attack was made by boats on a breach that had been established by fire from the ships, and the result of the joint attack was that the town fell into the hands of the sailors. They promptly opened the gates and admitted the soldiers who had carried the breach in the suburbs on the land side, the garrison retreating into the Castle. In this affair Colonel Isaac Petit was killed whilst reconnoitring in the suburbs. The Castle held out until September 8th, when it was surrendered.

In the summer of 1706 a new Train was assembled, which was intended to form part of an expedition under Earl Rivers for the invasion of the west coast of France, a French nobleman (the Marquis de Guiscard) having submitted a scheme for that purpose. This force, having discovered the futility of Guiscard's project, proceeded to Spain and landed at Alicante on February 8th, 1707. Colonel Michael Richards was Colonel of the Train as well as Chief Engineer, and under him were the following Engineers, viz., Lieutenant-Colonel Peter Durand, Captains John Chardeloup, Paul Robert la Mouline, and Pierre Gilbert de Pagez; and two Sub-Engineers, viz., John André d'Agnecourt and Maximilian

De Faviere. Subsequently, John Selliock was added, as we read in a minute dated June 4th, 1706—

"That Mr. Selliock for his better encouragement have leave to go with Colonel Michael Richards as Sub-Engineer, to be allowed out of the Contingencies 5s/ per diem."

Major-General John Richards was at this time appointed Governor of Alicante, and from there he kept up a lively correspondence with his brother Michael. The following extracts are amusing. The first shows that he had no love for the Artillery. Possibly the jealousy which has from time to time cropped up between the sister services existed even in those days, and he considered that he would find a sympathizer in his Engineer brother.

"Alicant, May 13th 1707.—I have had a great deal to do in my time with Artillery people, but I must confess I never met with so worthless a parcel of people as these are. I have already sent a detachment of them to Denia, pursuant to Lord Galway's orders, and the solicitations of the officer commanding there, so that, besides their insufficiency, here are but a few for the business which is to be done." . . . "Therefore, if you hear that the enemy marches towards" (us) "pray send us some other help, and seeing you will scarcely quit Mr. Erle, I wish that so active an honest fellow as Burgard would come here.'

On May 29th, 1707, he writes somewhat sarcastically about Jean Chardeloup, who was Chief Engineer at Denia:—

"The enemy are marching to Denia. Chardelon has again demanded more stores than the Tower of London does afford, and to the end that nothing may be wanting to make a vigorous defence, he desires me to send him a Protestant minister."

Meanwhile John Richards had apparently quarrelled with his Chief Engineer at Alicante, Captain Pierre Gilbert de Pagez:—

"Your Captain Pagez has taken a foolish occasion to be angry with me because I will not allow him to be another Vauban. He has desisted this month past from work and I from paying him. I doubt not that his anger is got as far as Lerida, but you and the General know what is best to be done in these matters, which I can assure you is that he has no reason."

Galway having been driven from Madrid, owing to the superior forces brought against him by Berwick, had retreated to Valencia, where he was joined by the troops which had landed at Alicante. Thus strengthened, he made preparations for a fresh advance towards the interior, with a view to the recovery of Madrid. In order to effect this it was necessary for him to give battle to Berwick, who barred the way to the capital. Galway's force, even with the addition of the troops under Rivers, did not exceed 16,000 men, and his Train, which was commanded by Michael Richards,

with Borgard as his second officer, only consisted of six pieces of field artillery. On the other hand, Berwick was at the head of 25,000, with a large train of artillery. Undaunted by this great disparity in numbers, Galway pushed forward, and after some manœuvring, in which he captured a quantity of stores from the enemy, the two armies came into collision on April 25th, 1707, at Almanza. The result was a disastrous defeat. After a battle of two hours, the allied forces were beaten at all points, and suffered great losses. Galway was enabled to withdraw the remains of his army in good order, under cover of some dashing charges of cavalry.

"But before doing so he sent off, under Michael Richards, the English train of six guns, most of the Allied camp equipment and baggage, the commissariat stores and the ambulances with the wounded and sick, and these, which formed a convoy of 400 waggons, arrived in due time safely at the Grao of Valencia."*

The result of this battle was that all the open country of Valencia and Catalonia was lost to King Charles, only the fortified towns, including Alicante, Denia, Xativa, Valencia, Barcelona, and others remaining under his control. Even of these he speedily lost several, including Valencia.

The French then proceeded to besiege Denia. This town was surrounded by a wall, and within the enceinte was a castle upon a slight eminence. The garrison was partly English and partly Spanish. The former occupied the castle, whilst the latter were in the town. Lieutenant-Colonel Jean Chardeloup, a Queen's Engineer, directed the defence, and threw up a series of earthworks to supplement the fortifications. On June 15th the besiegers, numbering 4,000 men, appeared in front of the place, and invested it, awaiting reinforcements. These, to the number of 5,000 troops and a siege train, arrived on the 26th. Ground was at once broken and batteries thrown up. Fire was opened on the 30th, which was smartly responded to by the defenders. By July 5th the approaches had advanced to within 150 yards of the place, and a practicable breach was established. The assault was delivered on the 7th; but Chardeloup had strongly retrenched the weak point, and after an hour's hard fighting the stormers were repulsed. This was repeated on the following day with the same result. The French then further developed their attack and threw up new batteries, from which they made another breach to the left of the original one. Fresh assaults were made on July 10th and 11th, the latter by the whole available forces

* Parnell: "War of the Succession in Spain," p. 220.

of the besiegers. On both occasions they were driven back with great slaughter, the result being that the siege was raised, after having lasted twenty-seven days. The French loss in this futile effort was 3,500, of whom 1,500 were killed, whilst that of the garrison was only 300. This gallant defence reflected the highest credit on Chardeloup, who had conducted the Engineer portion of it with much skill and determination.

Meanwhile strong efforts for the defence of Catalonia were being made.

"On May 11th Michael Richards (accompanied by Lewis Petit and Borgard) with the field train from Almanza had arrived at Tortosa. Petit was charged with the duty of preparing that fortress for a siege. Lieut.-Colonel Durand was sent to Tarragona, and similarly other Queen's Engineers were despatched to Lerida, Mequinenza, Mongon and the various towns along the Aragon frontier."*

The next incident interesting to Engineers was the defence of Tortosa, conducted by Colonel Lewis Petit, assisted by Captain La Mouline. On June 11th, 1708, the Duc d'Orleans invested the place with a force of 22,000 men, the garrison under Count Esseren being 3,200 regulars and 1,000 militia.

The trenches were begun on the 21st, and three days afterwards fire was opened from sixteen guns, besides mortars. The defence was very spirited, and in a sortie on the 27th much damage was inflicted on the besiegers' batteries.

"On the 8th July Orléans had sapped to within fourteen yards of the counterscarp, whilst 27 guns were piercing the escarp, and the next night he assailed and carried the covered way. However, for an hour and a half the Austrians poured on it a shower of projectiles, after which Esseren made a determined sortie, in which, being seconded by musketry and grenades, he effected considerable injury, and on its conclusion Petit sprang with good effect one of the charges which he had placed under the covered way."†

All the efforts of the defence were, however, futile, owing to the great superiority of the besieging force, and on July 10th Esseren surrendered. Captain La Mouline was killed during the siege.

In the month of January of this year all the Spanish and Portuguese Trains were consolidated into one, of which the Colonel and Chief Engineer was Michael Richards, whilst the Lieutenant-Colonel, and second in command, was Albert Borgard. There were ten Engineers attached to this amalgamated Train, but no record exists of their names. Taking, however, the

* Parnell, p. 231. † *Ibid.* p. 248.

total number of Engineers serving with the separate Trains, and omitting the names of those who had been killed, or who had left the country, we may assume that the following list is not far wrong:—Lewis Petit, James Petit, John Massey, Alexander Forbes, James Johnson, Thomas Phillips, Roger Davies, Peter Durand, Edward Ridley, and Maximilian Faviere. Besides these ten John Hanway was at Alicante, and George Carleton at Denia.

Colonel Carles was not one of the original ten, as we read in the following minutes, that he had joined the Portuguese service as a Major-General (in this capacity he conducted the defence of Ciudad Rodrigo in September, 1708):—

"Jan^{y} 31st 1708.—That a Representation be made to His Grace the Duke of Marlborough, Master General of the Ordnance, upon a Memorial delivered to His Grace by Colonel Carles for leave to go to serve the King of Portugal and to order the payment of Engineer's place he has in the Train that was in Portugal and went to Spain Feb^{y} 3rd 1708. On the above His Grace was pleased to return for answer by Mr. Craggs that the three Trains in Spain and Portugal being reduced to one, and the Lord Galway having filled up all the Engineers' places in that Train, and the same being approved of by the Queen, which the Board cannot add to or alter, His Grace agreed to the same and referred the Colonel to Her Majesty."

On this we find that the Board received a letter from the Earl of Sunderland, dated February 19th, 1708—

"Signifying Her Majesty's pleasure that Monsieur Carles (in consideration of the pressing instances made by the Envoy of Portugal in the name of the King his master) be made one of the ten Engineers upon the Establishment of Spain on the first vacancy, and that in the meantime £100 per annum upon that Train be added to his salary."

In the month of August, 1708, General Stanhope, with a force composed of British Artillery and Marines, and a few battalions of Spaniards, Portuguese, and Italians, landed in Minorca, and immediately laid siege to Port Mahon. Colonel Lewis Petit accompanied the expedition as Chief Engineer, and conducted the siege operations. The place fell on September 30th, and a few days later the whole island surrendered to the British. Colonel Petit was appointed Governor of Fort St. Philip, the fortress of Port Mahon, and Lieut.-Governor of the island. The result of this acquisition was the formation of another Ordnance Train, for the defence of the place, in January, 1709. Of this Train Colonel Peter Durand was appointed Commandant and Chief Engineer. In a list dated March 20th, 1712, we find him named

as Brigadier and Chief Engineer at Mahon, and Captain Robert Latham as Engineer.

In 1712 General Michael Richards, then Chief Engineer of the kingdom, reports :—

"I have examined the Plans and Estimates of the Fortifications of Mahon. In relation to which it may be requisite to acquaint you that I did never interfere with the Fortifications there, being always employed in the service of the Artillery, and was but once at Mahon a few days to lodge the stores that came from England in 1709" (these were evidently the stores which accompanied the Train under Colonel Peter Durand), "at which time the works at S^{t} Philip were but just begun, So that 'tis impossible I should be a competent judge. As to the project of the Plan, I humbly conceive it was concerted on the spot by the Engineers and approved by His Grace the Duke of Argyll, who, as I have been informed, went thither by Her Majesty's orders. There are two Estimates, the one calculating the expense of finishing what is begun and what is further thought fit to be done at S^{t} Philip's, amounting to £68,295 10s., the other for fortifying the opposite side of the Harbour to Fort S^{t} Philip, which in the Plan is called Fort S^{t} Anna, amounting to £175,364 14 0" . . . . "Two Engineers are not sufficient, nor do I find that Brigadier Durand, the Chief Engineer, has pay as such, whom the Duke of Argyll does design Inspector of the whole" . . . . "The annexed establishment" (evidently a list of officers for Artillery, Engineer and Store service) "is a Rough Draught calculated on a supposition that there can be no less than 300 Guns and 30 Mortars or Howitzers" . . . . "The Colonel or Commander in Chief may be the Chief Engineer" . . . . "As for as many Engineers as are proposed they may be included in the 1st and 2nd Captains."

It is not clear when Brigadier Lewis Petit left Port Mahon, but in September, 1714, there is a minute directing him to—

"Go immediately to Fort William in North Britain, and apply to and consult with Lieut. Gen^{l} Maitland about what he proposes to be done to the Fortifications there."

This minute leads to the supposition that at that time he was stationed and employed at home, but a month later there is a record of a memorial from Brigadier Lewis Petit to the Lords of the Treasury—

"In relation to the debts contracted at Port Mahon for the Government, praying payment, without which he will not be able to go to Port Mahon, where he is ordered to proceed."

Apparently he did not then return, because in August, 1715, there was an order for Brigadier Lewis Petit to proceed to Portsmouth to carry out "the works to be done at that place," and in November of that year he was appointed Chief Engineer of the Train to proceed to Scotland for the army of the Duke of Argyll

against the Pretender, where he went accompanied by Captain Philips and Captain Greuil. Soon after this Brigadier Durand died at Gibraltar, and a letter was sent on June 29th, 1716, from Mr. Secretary Stanhope to the Lords of the Treasury, signifying His Majesty's pleasure "for Brigadier Petit to have an allowance of 30s. per day as Chief Engineer of Minorca, in the room of Brigadier Durand, deceased."*

To revert to affairs in the Peninsula. On November 1st, 1708, the French once more besieged Denia. Chardeloup was still in the place, and conducted the Engineer branch of the defence. Under him was the Captain George Carleton already referred to, who, although not an Engineer, acted voluntarily as such on this occasion, as he had done throughout the campaign. After a siege of eighteen days the garrison was forced to capitulate, and both Chardeloup and Carleton became prisoners of war, in which position they remained until the Peace of Utrecht restored them to liberty.

The French next advanced against Alicante, the last Valencian stronghold which still resisted their arms. Major-General John Richards was the Governor, and Captain Pierre de Pagez Chief Engineer. The latter was assisted by Captain Robert Latham. The fortifications of the town were very poor, and Richards had devoted most of his attention to developing the strength of the castle, deeming that he would be better able to maintain his defence at that point than by endeavouring to hold the town. Consequently, when the French arrived before the place on December 1st, they found no difficulty in making themselves masters of the latter, Richards having withdrawn the garrison into the castle. This the French General soon discovered to be almost impregnable by breaching, and he therefore resorted to mining, for which purpose he pushed a gallery through the Rock, on the summit of which, nearly 200 feet above the level of the town, the castle stood. The garrison was not strong enough to undertake a sally, and so the work went on undisturbed for no less than three months. Pagez endeavoured to mitigate the effects of an explosion by sinking a shaft through the parade, as nearly as he could judge over the position the chamber would occupy.

On February 25th, Richards contrived to send off a letter to his brother Michael, telling him of the mine, and of his intention to stand its effects, ending with the words, "Good night, Micky; God

* Durand died at Gibraltar, where he had acted as Chief Engineer in succession to Joseph Bennet. He was apparently holding the same post for both stations, Lewis Petit not having taken over the Minorca command from him, as it had been intended that he should.

send us a merry meeting." The catastrophe may well be described in Parnell's words :—

"The chamber D'Asfeld had excavated was loaded with 1200 barrels of gunpowder each containing a quintal or 98 lbs. English, and thus the total amount was 117,600 lbs., which is perhaps the greatest single charge that has ever been used in war. On February 20th D'Asfeld summoned Richards to surrender, and invited him to send two officers to inspect the mine. He accordingly despatched Pagez and Thornicroft, who reported that it was a *bona fide* one and ready to be sprung. Still the rock was honeycombed and traversed by various internal clefts, and it was not unreasonably hoped that these with the shaft sunk by Pagez would to a great extent render nugatory the effects of the blast. After carefully weighing the reasons for and against holding out, Richards informed D'Asfeld that he would abide the springing of the mine. . . . . Early on the morning of Monday March 3rd Richards, accompanied by Syburg and Thornicroft, and attended by the senior officers of the garrison off duty, deliberately took up his station on the parade under which the gallery had been driven . . . Shortly before six o'clock the people below were observed to be fleeing in crowds from that part of the town nearest the castle. Soon a slight smoke was seen ascending the face of the precipice and the corporal of the adjacent guard cried out that the hose was lit. Almost at the stroke of six a convulsion shook the rock and the parade was split by several long irregular fissures which opened and immediately shut again. In these rifts the heroic Richards and many of the devoted officers around him were literally entombed alive, and with them the greater portion of the Guards. Besides the Governor, Syburg, Thornicroft, and Major Vignoles, there perished by this dreadful death five captains, three lieutenants, and forty-two soldiers."

This calamity did not cause the surrender of the castle. Lieut.-Colonel D'Albon, who by Richards' death became the senior officer of the garrison, at once answered the explosion (which had done but little damage to the works) by opening fire from all his artillery. He placed his troops on short commons, and determined to keep up the defence until he was relieved. At length, on April 15th, Admiral Byng appeared off the town with twenty-three sail of the line and a land force of 3,500 men. After attempting in vain to silence the besiegers' batteries from his ships, he and General Stanhope (who was in command of the troops) agreed to treat with D'Asfeld. The result was that the garrison marched out with the honours of wars, and the castle surrendered to the French. This was a somewhat ignoble conclusion to so gallant a defence, but one for which the brave defenders of Alicante were in no way responsible. Captain Pagez received promotion to a lieutenant-colonelcy for his services.

Little more need be said of the remainder of the war, which dragged its slow length along through 1710 and 1711. Major-General Carles, who had served with the Portuguese army since 1708, and had been taken prisoner at Ciudad Rodrigo in the autumn of that year, was afterwards exchanged. His name appears in several of the subsequent actions throughout the year 1709, after which he retired to England, where he died in 1730, aged 64 years. Brigadier-General Michael Richards continued to command the Train, and took part in all the actions up to September, 1711, when he was recalled to England to take up the post of Chief Engineer of the kingdom. In August, 1712, a suspension of hostilities took place, and this was followed by the Peace of Utrecht, which was signed on April 10th, 1713.

We get during all these years many glimpses of Engineer work on the other side of the Atlantic. As far back as 1696, Christian Lilly had been appointed Chief Engineer of Jamaica, by Warrant dated November 12th. He was instructed to "repair, amend, and enlarge the fortifications," and generally to direct Engineer operations "necessary to oppose the attempts of the enemy." (Add. MSS., Brit. Mus., 12,427, fo. 25.) In the same year, Helier Lands was nominated for duty in the Leeward Islands, and this was followed, on December 3rd, by an order to Talbot Edwardes to take up the post of Chief Engineer of Barbados and the Leeward Islands. Shortly after, Captain Henry Brabant was appointed Engineer at New York.

In January, 1697, the Council made a report to the King as to the necessity of an efficient defence of Newfoundland being provided for, as the island was constantly menaced by the French, who had erected strong works at Placentia. Against these it was proposed to build some works and to establish a military force on the island. This was approved by the King, and a Train of Ordnance was despatched with the following Engineers:—Michael Richards, in command of Train and Chief Engineer; Isaac Francis Petit as Engineer, with Thomas Bell, Benjamin Withall, and Francis Hawkins as Sub-Engineers. Later on in the year, Colonel Wolfgang Romer was ordered to New York for duty there and in New England. He objected to the post on the plea that the allowance (£365 a year, the same as he was receiving at home) was too small, and for his opposition was suspended by the Master-General Lord Romney. The matter was settled by the King increasing his appointments by 10s. a day, when he at once proceeded to his destination. The Board were highly indignant, and wrote that—

"His Majesty's favor in taking off the suspension, and granting him an additional extraordinary pay after he had so peremptorily refused to

go as Engineer to New York may give great encouragement to such practices, and very much prejudice the service."—(Mast. Genl. Letters in W. O. 1696-1699, No. ii. p. 20.)

Romer soon did good work at New York, demolishing the old fort and designing and erecting Castle William on Castle Island. (Neal's "History of New England.")

In 1701, Christian Lilly and Thomas Bell were sent to Jamaica, where they were employed in fortifying the harbours and making surveys. In 1703, a force was sent to the West Indies, in the fleet commanded by Admiral Graydon; Engineers John Hanway and George Conrade, and Sub-Engineer John Barker accompanied the expedition. Nothing of any importance was done, and after visiting Newfoundland, and bringing away Michael Richards, who was wanted in Flanders by the Duke of Marlborough, the fleet returned home.

In 1706, Colonel Wolfgang Romer was recalled from New York; Captain Redknap, who had served under him for two years, taking his post of Chief Engineer. On the voyage home, the ship in which Romer sailed was taken by the French, and he was brought into St. Malo. He was permitted to return to England on parole, not to serve till exchanged. As his talents were in considerable requisition, efforts were made to effect the necessary exchange. At first, twenty seamen were offered, that being the usual equivalent for a colonel. This was refused, and a higher bid was then made. It was proposed to exchange him for Major-General the Marquis de Levy, who had been captured in the *Salisbury*, or else for the captain of that ship, the Chevalier Nangis. (War. Ord. in Coun., &c., in W. O., vol. xviii. pp. 270-278.)

Although there is no record which of these alternatives was accepted, it is clear that an exchange was effected, as we find him shortly after on duty at Portsmouth.

In 1710, an expedition was despatched to New England under Colonel Nicholson, which arrived at Boston on July 15th; Alexander Forbes was appointed Engineer to the force. Port Royal was attacked and taken after a short siege, in which Forbes distinguished himself. The name of the place was then changed to Annapolis Royal. A few days later, a detachment under Captain Pigeon, accompanied by Forbes, pushed their way up the river, where they were surprised by a body of Indians, and many of them killed; amongst these was the Engineer. The scene of the slaughter is about twelve miles above the fort on the road to Halifax, and is still called "Bloody Creek."

In the same year, the Bahamas having been taken under British protection, it was proposed to restore the fortifications of New Providence for the security of the trade through the islands

and the Gulf of Florida. Francis Hawkins was appointed by Warrant to proceed from Jamaica for this duty. He was to make a general survey of the position, to estimate for the restoration of the fort, and to prepare designs for other necessary works, such as barracks, storehouses, and a residence for the Governor. This he accomplished, sending home an estimate for £7,000, and then returned to his post at Jamaica.

In 1711, an expedition under Brigadier Hill was sent to Canada. The Train was commanded by Richard King, who also acted as Commanding Engineer and Quartermaster-General. Under him were the Engineers John Hanway and James Moore. They reached the St. Lawrence on August 14th, intending to capture Quebec and drive the French out of Placentia. They, however, met with such bad weather, accompanied with dense fogs, that eight of the transports were wrecked and nearly 800 men lost. This disaster compelled the abandonment of the undertaking and the return of the expeditionary force to England.

In the same year, Colonel Christian Lilly was sent from Barbados to Newfoundland to report on the defences there, and at the close of his mission was recalled to England after many years' service at Barbados. St. Anne's Fort at the latter station was designed and almost entirely constructed by him.

CHAPTER VII.

1713-1748.

Establishment of Engineers in 1714—Michael Richards appointed Surveyor-General, and John Armstrong Chief Engineer—Formation of a Corps of Engineers—Separation of Artillery—Establishments for Minorca and Gibraltar—Scotch Rebellion of 1715—Reports on the Fortifications—Irish Engineers—Code of Instructions for Engineers—Renewal of the War with Spain—Train appointed—Attack on Cartagena—Foundation of Royal Military Academy—Death of Armstrong—Train for Flanders—Battles of Dettingen and Fontenoy—Engineer Promotions in 1744—Capture of Louisburg—Trains for Newfoundland and Nova Scotia—Scotch Rebellion of 1745—Attempt on l'Orient—Brigade of Engineers for Flanders in 1747—Battle of Val—Defence of Bergen-op-Zoom—Engineers in India—List of the Corps in 1748.

The Treaty of Utrecht having put an end to the War of the Spanish Succession, the several Trains which had been raised for service during that war were, as a matter of course, disbanded, and the Engineers reduced to the ordinary peace footing. On the other hand, as the terms of the Treaty left England with the acquisition of Gibraltar, Minorca, and Nova Scotia, an extra staff was required for each of those stations.

In May, 1714, the Rolls showed the following Engineer distribution :—

Old Establishment.

		Pay per annum.	Travelling allowances.
Chief Engineer	Michael Richards ..	£300 ..	20s. 0d. a day.
Second „	Talbot Edwardes ..	250 ..	13s. 4d. „
Third „	Christian Lilly ..	150 ..	13s. 4d. „
Engineers ..	Peter Carles ..	100 ..	Actual expenses incurred.
	Thomas Phillips		
	Richard King ..		
	John Armstrong		
	James Moore ..		
	John Romer ..		

New Establishment.

		Pay per annum.	Travelling allowances.
Engineers	Lewis Petit Albert Borgard John Hanway John Armstrong Thomas Lascelles William Horneck	£100	Actual expenses incurred.
Sub-Engineers	Francis Hawkins John Barker John Selioke Benjamin Withall	50	Ditto

It will be seen by the above that John Armstrong was on both establishments, consequently he drew pay from both.

Special Establishments.

		Pay per annum.	Travelling allowances.
North Britain	Theodore Dury	£127 15s.	Actual expenses incurred.
Gibraltar	Jonas Moore	182 10s.	
Minorca	Peter Durand	365 0s.	
Newfoundland	George Vane	365 0s.	
New York	John Redknap	148 10s.	

Half-Pay List.

Flanders Train	Sub-Engineer Nicholas Dubois	£50	0
Spanish Train	Engineer Jean Chardeloup „ Maximilian Faviere „ John Greuil „ Bloom Williams	91	5
	Sub-Engineer Edward Ridley	50	0

Other Trains,	Engineer Joseph Bennet	£182	10	Gibraltar, &c.
„	Francis Hawkins	91	5	Flanders, &c.
„	John Redknap	74	5	New York.

To these were afterwards added—

Sub-Engineer	Noel Merchant	£50
„	Francis Leep	50

From this it appears that Francis Hawkins and John Redknap drew half-pay for former services whilst still on the Establishment.

Two men who had been Engineers, but were now serving as Artillery officers, were in the receipt of half-pay for their Engineer services, viz.—

Lieutenant-Colonel Roger Davis	£182	10	0
Major James Petit	136	17	6

Irish Establishment.

Chief Engineer Thomas Burgh	£300	0	
Second „ John Corneille	182	10	
Third „ James Wybault	146	0	

To complete the list, the following should also be referred to:—Brigadier Theodore Collier and John Massy. Collier, formerly an Engineer, had latterly been in command of the Portuguese Artillery. Massy was in the same service as Chief Engineer. These officers, had they returned to England, would have been entitled to a place on the half-pay list.

Such was the Engineer establishment in the year 1714. By this time the system had been found to work very badly. The Artillery were naturally discontented at the comparatively subordinate position in which they found themselves, and the Engineers who had served throughout the war but were not on the establishment, were clamouring to be placed there. Those who had been fortunate enough to secure a position on that coveted list complained at the same time of the smallness of the pay they were receiving, and pressed urgently for an increase.

In this conjuncture, Michael Richards, the Chief Engineer, put forward a scheme for the separation of the Artillery and the development of his own branch of the service. The following extracts from his paper bear upon the latter part of the subject:—

"It is fit to take notice that whenever anything has been done in our Fortifications it has been from pure necessity and the performance in a hurry, whereas these being works for the Safety and Honour of Princes and Nations they require the most mature deliberation of even Princes and their Prime Ministers; and as the fortifications of these Nations are chiefly for the security of their Seaports and Navy, the opinions of the Generals of the Sea seem to be highly necessary in conjunction with those of the Land, which would more reasonably produce better projects than those that have been hitherto attempted." . . . "The Engineers in Ordinary ought to be appointed to reside at the several Fortifications and to employ themselves in making actual Surveys, Plans, &c., whereby they will be perfectly acquainted with all the circumstances of the place they are encharged with, and will be always ready to give particular and regular informations, &c. As for the Practitioner Engineers they may be

educated in the several Companies* amongst the Subalterns, by which means they will be distributed in the several Garrisons and have the proper opportunity of employing their genius in seeing what works are carried on" . . . "It may also be observed that the proposed New Establishment may be calculated within the present charge of the Old or present Establishment" . . . "as does more plainly appear by several calculations made by Mr. Mercator in an Essay of his for a Regimental Establishment" (for the Artillery) "which as it met with the approbation of the Board has put me upon this attempt of revising it; hoping that this short account, as imperfect as it is, will suffice to give an idea of the great benefit which may arise from such a form, since it may be easily made to appear that the Stores of Artillery and Fortifications may be cheaper and better looked after by the methods and regulations that will proceed from this Establishment than they possibly can be from the present one."

Meanwhile, in a minute of the Board of Ordnance, dated December 6th, 1714, among other appointments appear the following:—

"As also the Honble Brigadier Richards's Patent constituting him Surveyor General of the Ordnance, in the room and stead of William Bridges Esqre deceased, dated the 2nd inst. . . As likewise Colonel John Armstrong's Patent appointing him Chief Engineer (in the room and stead of Brigadier General Richards promoted as above), and to sit and act at the Board as a Principal Officer of the Ordnance, dated the 2nd inst."

This is followed, four days later, by another minute:—

"Several applications being made to His Grace ye Duke of Marlborough, Mas. Genl of ye Ordnance, for Vacancys of Engineers upon ye Establishmt of ye office wch His Grace hath referred to ye Board It is therefore ordered that upon all such Applications The persons so pretending shall sett forth a memorial ye time of his Service, where employed yearly, in what Sieges, Works &c., giving an Acct of Planns or Journalls he hath presented to ye Board according to his Instructions, and yt he produce such as shall show how he hath Employed his Time. And yt ye Chief Engineer examine & certifie to ye Board how he finds such Persons Qualified, & whether they have informed themselves in such parts of ye Mathematicks as are absolutely requisite for an Engineer, according to ye Class he shall pretend to & yt ye Copy of this order be given to ye Chief Engineer for his Instruction."

It is evident that by this time it was generally known that great changes were impending, and the applications for admission into the new establishment were numerous.

The Engineer element of the Board was now much strengthened. With such men as Richards and Armstrong forming two

* The companies here referred to are the Artillery Companies proposed by this scheme to be formed.

out of the very limited number of which that body was comprised, it was not likely that the interests of their branch of the service would fail in being brought to the fore. We therefore find that the scheme originally ventilated by Richards was developed. The Artillery was placed upon a proper footing as a separate establishment of two companies, and, what more concerns this history, a regular Corps of Engineers was formed, to consist of—

1	Chief Engineer at 27s. 6d. per diem ..	£501	17	6
3	Directors at 20s. per diem	1,095	0	0
6	Engineers in Ordinary at 12s. per diem	1,314	0	0
6	„ Extraordinary at 8s. per diem	876	0	0
6	Sub-Engineers at 5s. per diem.. ..	547	10	0
6	Practitioner Engineers at 3s. per diem	328	10	0
28		£4,662	17	6

The Warrant for these great changes was given at St. James's, May 26th, 1716, in the second year of George I., and was signed "Stanhope."

This day may therefore be taken as that on which the Engineer branch of the British army blossomed into a distinct Corps, with grades, and a prospect of steady and continuous advancement from rank to rank without impediment or hiatus. It is also the birthday of the Royal Regiment of Artillery. From this time that Corps became quite distinct from, and was no longer controlled by, the officers of the sister service. It rapidly reached to a sturdy manhood, and few who have not studied the details of the Ordnance history of the seventeenth and eighteenth centuries, have any idea how recent has been the emancipation of that noble regiment from the control of the Engineers.

The next step in development was granted in a Warrant dated August 22nd, 1717, when establishments were formed not only for the United Kingdom, but also for Minorca and Gibraltar. The numbers by this Warrant were raised to thirty-four, classed as follows:—

For Great Britain.

1	Chief Engineer at 27s. 6d.	£501	17	6
2	Directors at 20s.	730	0	0
2	Sub-Directors at 15s.	547	10	0
6	Engineers in Ordinary at 10s. ..	1,095	0	0
6	Engineers Extraordinary at 6s. ..	657	0	0
6	Sub-Engineers at 4s.	438	0	0
6	Practitioner Engineers at 3s. ..	328	10	0
29		£4,297	17	6

For Minorca.

1 Director at 20s.	£365	0	0
1 Engineer Extraordinary at 10s. ..	182	10	0
1 Sub-Engineer at 3s.	54	15	0

For Gibraltar.

1 Sub-Director at 15s.	£273	13	0
1 Engineer in Ordinary at 6s.	109	10	0

Several changes were effected by this Warrant. The rank of Sub-Director was created with pay at 15s. The pay of both Ordinary and Extraordinary Engineers was reduced by 2s., and that of Sub-Engineers by 1s.

It seems strange that the Chief Engineer for Minorca should have been a Director, whilst that for Gibraltar (apparently far the more important post) was only a Sub-Director. It also seems curious that the pay of the Extraordinary Engineer at the former station should be 10s., whilst the Engineer in Ordinary (a higher rank) at Gibraltar only received 6s. It is not improbable that this was a clerical error in the Warrant, a not unusual event in those times, mistakes in calculation often occurring. It may also be noted that whilst this Warrant completed the separation of the Artillery from the Engineers in all other cases, at Minorca and Gibraltar the Chief Engineers still held control over the sister service, their Warrants placing them in complete command of the Ordnance Trains as well as of the civil establishments.

Such was the new constitution of the Corps of Engineers *on paper*, but it was many years yet before it became an actuality; the old establishment was still in existence, and it was only after that had been gradually absorbed that the scheme could be said to be in full vigour. For more than thirty years the remnants of that establishment clung to their position, and the principle which had been laid down of building up the new corps from the ruins of the old list had even then to be somewhat violated in order to hurry on the process of reconstruction.

Meanwhile the Scotch rebellion of 1715 had run its course. The death of Queen Anne in August, 1714, and the accession of George I. had been followed by a general rising of the clans. On the first symptoms of the coming storm, General Maitland, who commanded at Fort William, applied in haste for an Engineer:—

"All the platforms are wholly out of order, a new gate is wanted for the principal port, a new gate to the ravelin, and new gates to the Sally-

port. The bridges are entirely out of order, and the pallisadoes all along the river Nevis are perfectly ruinous."

And again, three weeks later,—

"We are very busy dressing the parapets, planting pallisadoes, and doing all we can to make the best of a bad bargain. . . . Once more I entreat you to get an Engineer sent to this fort and the outposts."

In reply to this request, Brigadier Lewis Petit was sent to Scotland in September to assist the General with his advice, and to report on the state of the works there as well as at the other forts and castles in Scotland. Having done this he returned to London with his proposals and estimates. Theodore Dury was at the same time scouring the country, visiting the castles of Edinburgh, Stirling, Dumbarton, and others, making such arrangements at each as should render it safe from sudden attack.

Imminent as was the crisis, officers of the Board of Ordnance were not to be moved from their usual routine. Having received Petit's report, they decided that it should be considered and laid before the King "against the spring, the present season not being proper for doing any work" (War. Ord. in Coun. in W.O., vol. xx. pp. 126 to 152).

The next year was a busy one for the Engineers in Scotland. As far as can be traced the following officers were in that country:—Theodore Dury, William Horneck, Thomas Lascelles, John Romer, and John Greuil. The latter was present at the battle of Sheriffmuir on November 13th.

On November 27th a Warrant was issued for an Ordnance Train for service in Scotland. Of this Train Brigadier Lewis Petit was appointed Commanding Engineer, Albert Borgard being its chief. They, however, arrived too late for any active service. The Duke of Marlborough, at the end of this year, ordered complete surveys and reports to be prepared of the fortifications, barracks, and storehouses in the kingdom. Engineers were appointed by the Board to carry out this very necessary service, there being at the time no records, and little being known of the state of the various works. We find the allotment was made as under:—

Captain Talbot Edwardes, Second Engineer, Portsmouth Division.

Portsmouth Town.
Southsea Castle.
Blockhouse Fort.
Charles Fort.
James Fort.
Gosport.
The Dock.

Yarmouth, Sandham, Carisbrook, Cowes, } Isle of Wight.
Hurst Castle.
Calshot Castle.

Colonel Lilly, Third Engineer, Plymouth Division.

Portland Castle.	Pendennis.
Plymouth.	St. Mawes.
St. Nicholas Island.	Scilly Islands.

Captain Theodore Dury, North Britain.

Edinburgh.	Dumbarton.
Stirling.	Blackness.
Fort William.	

Captain Thomas Phillips, North of England:

Scarborough Castle.	Clifford's Fort.
Berwick.	Hull.
Holy Island.	Carlisle.
Tinmouth.	

Captain John Greuil, Medway River and Chatham.

Sheerness.	James Battery.
Howness.	Middleton Battery.
Gillingham.	Upnor.
Cockham Wood.	

Lieutenant John Romer, Tilbury and Gravesend.

John Brookes, Cinque Ports.

Dover Castle.	Deal Castle.
Monts Bulwark.	Walmer.
Archcliff Fort.	Sandgate.
Sandown.	

The following stations were also to be reported on, but at the date of the above selections (January 10th, 1716) the officers had not been named, viz., Harwich, Landguard Fort, North Yarmouth, Chester, Jersey, Guernsey, Windsor, Whitehall, and Tower of London (Mast. Gen. in W. O., No. v. page 74).

On July 3rd, 1716, a Warrant was issued to Brigadier Lewis Petit, as Chief Engineer and Commander-in-Chief of all officers, bombardiers, gunners, and other attendants of the Office of Ordnance at Port Mahon, Minorca, with pay at the rate of 20s. per day, and on March 18th, 1717, another Warrant was granted by George I. appointing Brigadier Michael Richards Superintendent-General of the inspection and direction of all the foundries of Great Britain, with a salary fixed by the Board at £500 a year, and 20s. per day for travelling allowances.

On July 17th, 1717, John Armstrong was commissioned to the

command of the 43rd Regiment, and he appears at this time to have held the post of Secretary to the Captain-General of the Forces (the Duke of Marlborough). He was also Quartermaster-General, having succeeded Cadogan on December 22nd, 1712 ("Commission Book," 1712, vol. 1265, p. 17). For these offices he was paid on the Army Votes. For his Ordnance posts, viz., Chief Engineer of Great Britain, one of the Principal Officers of the Ordnance, and Commissioner for the demolitions at Dunkirk, he was paid on the Ordnance Estimates. On the same day that Armstrong was appointed Quartermaster-General of the Army, Thomas Lascelles was made Deputy Quartermaster-General, with the rank of Lieutenant-Colonel.

By the year 1722 there had arisen ten vacancies on the old establishment by deaths, transfers, and absorptions, consequently there were ten men appointed to the new list. These were—the Chief Engineer, John Armstrong; Director, Thomas Lascelles; Engineer-in-Ordinary, John Romer; Sub-Engineers, Joseph Day and Peter Petit; and Practitioner Engineers, William Skinner, Thomas Moore, Hill Mussenden, Robert Bousfield, and James Wibault. This left nineteen vacancies still to be filled; but these had to await further casualties on the old list. The men still remaining on that list were—Christian Lilly, Peter Carles, Thomas Phillips, John Hanway, Richard King, James Moore, John Selioke, Francis Hawkins, Benjamin Withall, and Theodore Dury.

The foreign establishments stood thus:—

Minorca: Sub-Director, William Horneck, with four Practitioner Engineers, from the new list.

Gibraltar—Sub-Director, Jonas Moore; Engineer, John Hargrave, with one Practitioner from the new list.

Annapolis—Engineer, Paul Mascarine.

Placentia—Engineer, Humphrey Herbert.

South Carolina—Engineer, John Barker.

Jamaica—Engineer, Francis Hawkins.

In the following year it was proposed to reduce the Minorca establishment by three Practitioners, leaving only one to work under Horneck. This order, however, although issuing from the Board, seems never to have been carried out, which is not surprising, in view of the dangers with which the island was threatened.

In 1725 the Board adopted a new principle for the instruction of the junior officers. They ordered frequent exchanges of stations, so that, failing opportunities of special study at a military school, Practitioners might gain knowledge by visiting different fortresses. With this view Peter Laprimaudaye and William

Skinner were ordered from Minorca to Gibraltar, to be employed under Jonas Moore. Whilst there they executed a general survey of the Rock. At the same time James Wibault was sent to Mahon. These changes were really necessary, as there was no Military Academy, no examination, and no competition; the candidates were selected by the Chief Engineer of the kingdom, and it was certain that under such circumstances there must have been many appointments of men but poorly fitted for the office of an Engineer. The cadets of the Ordnance were all intended for the Artillery service, and up to this time there had been only one instance of a cadet-gunner becoming an Engineer. That was Thomas Armstrong, the brother of the Chief Engineer. In such a system of pure patronage, it was absolutely necessary to afford young officers every possible opportunity of obtaining the proper training by serving at different fortresses, where they would have the means of studying the best principles of fortification adapted to exceptional circumstances.

In 1730, further vacancies having occurred in the old establishment, the Corps was increased by promoting John Romer to the rank of Sub-Director, Joseph Day to Engineer in Ordinary, Thomas Armstrong and William Skinner, Engineers Extraordinary; Thomas Moore, Bloom Williams (who had been dismissed some years before for refusing to go to South Carolina and was now reinstated), James Wibault, and Charles Campbell as Sub-Engineers, and Leonard Bickerstaffe as Practitioner. The last two were new appointments. On December 18th, in this year, Thomas Burgh, the Chief Engineer and Surveyor-General of Ireland, died. He had had a lengthened career in that country, having served under William III. both in his Irish war and afterwards in Flanders. He had held the post of Chief Engineer of Ireland for many years, and was member of Parliament for Naas from 1715 to the time of his death. He was succeeded by Sir Edward Lovet Peirce, whose Warrant as Chief Engineer and Surveyor-General was dated on January 16th, 1731. He was at the time member for the borough of Ratoath, and had been the designer of the Irish Houses of Parliament, the first stone of which was laid on February 3rd, 1729 ("London Gazette," February 11th, 1729). He did not live to witness the completion of his noble pile, as he died in 1733, the work not being finished until 1741 under the charge of his successor, Arthur Dobbs, whose Warrant is dated May 2nd, 1734. He also was a Member of Parliament for Castle Dobbs, Lisburn.

In May, 1735, Colonel John Armstrong, the Chief Engineer of the kingdom, was commissioned as Colonel of the Royal Regiment of Ireland (now the Royal Irish) in the place of Sir Charles

Hotham, Bart., "and also to have a Company in it." On November 22nd, in the same year, he was made Brigadier-General.

The first code of instructions for the new Corps of Engineers was published in 1740. It was entitled "General Instructions for the Engineers, to be sent to the several Garrisons." The only portion of these instructions that need be referred to here is that connected with the Ordnance. This shows clearly that even at this date, a quarter of a century after the Royal Artillery had been formed into a separate service, the Engineers were supposed to have control over what is now the peculiar province of the sister service. In the sixth portion of the instructions, after dealing with the necessary inspection of the Ordnance Artificers, the document proceeds thus:—

"And as it is observable that we have more Guns in our Places than our most powerful Neighbours, altho' they are joined upon the same Continent and we on an Island, so we expose all our Guns mounted on Outworks to the Injuries of the Weather, both Carriages and Platforms, and even subject to Surprize in the Outworks, whereas theirs are secured both from Weather and Surprize under proper Sheds except some few for Allarms and Salutes, and the same is to be said in Articles of Pallisades which we are as irregularly profuse in and to as little purpose, since it would be very much for the Service that they should be preserved under Covers, except such as shall be necessary to secure the several Entrances and keep the Castle from the Works. It is therefore ordered that you take a regular and exact Account of the Numbers, Natures, Lengths and Weights of the several Cannon and how Mounted in each Garrison. You are to Number each Nature by itself either in Paint or Cut upon the Gun, beginning with the lowest and so upwards as far as it will go until the Number of that Nature is completed; the same to be done upon every nature and sent to the Office, to facilitate supplying them with new Carriages as Occasion shall require, according to the table hereunto annexed" (then follows a sample of the table to be compiled and the manner in which it is to be filled in). "That you carefully consider and compute what Number of Guns are necessary for the Defence of each place *including the Field Train** (where there is any), observing in general that no gun above a 12 Pounder is requisite toward the land, and that the natures above it be only employed towards the Sea, And as it is intended that there shall be no more Guns mounted than what shall be absolutely necessary for Alarms and Salutes according to the circumstances of the Places, You are to look out for Places for Building of Sheds for the whole Number of Gun Carriages, Platforms, and Pallisades, and for the laying of the Guns on Skids in good order before the said Sheds, excepting at such places where it may be very difficult to get the Guns off and on the Platforms, it should be endeavoured to make Sheds for them there if the place will admit of it. That such number of

* Writer's italics.

Guns (as) shall be over and above those that shall be thought necessary, be laid apart, in order to be transported to Woolwich. That all the Brass Guns not included in the Field Train be also transported to Woolwich, and that therefore he give the Board a particular Account of all he meets with, *taking Note whether any of the Brass Guns he shall so meet with may not be proper for the Field Train where they are.*" *

The following instructions for the preparing of plans and for scales are interesting :—

"When any new Project is to be made on an Old Plan, the New Plan is to be drawn in Occult or Prick'd Lines and Coloured with Yellow, the same to be observed in all Profils and Sections, that the difference between the Old Work and the New may be the more readily discerned. The following Measures for Geometrical Scales are certainly the most useful, being applicable to all sorts of Practice and being aliquot parts each of the other, the Plans Surveyed to any one of them may be readily enlarged or contracted as occasion shall require :"—

"1st. A Scale of 1600 Feet to an Inch for the General Map of a Coast or small Island, &c.

"2nd. A Scale of 800 Feet to an Inch for the Plan of a Town and parts adjacent.

"3rd. A scale of 400 Feet to an Inch for a particular Plan of a Town or Settlement.

"4th. A Scale of 200 Feet to an inch to Survey the same by.

"5th. A Scale of 100 Feet to an Inch for a particular Plan of a Fort Battery or the like.

"6th. A Scale of 10 Feet to an Inch for a Magazine or particular Building, Sections, or Profils of the same.

"7th. A Scale of 5 Feet to an Inch for a Draw-Bridge, Gun Carriage, or any other Carpenter's Work.

"N.B.—That a Chain of One Hundred Links, each Link one Foot in length, is the most proper to be used with the above Scales. Each Chain's length being 100 Feet, 20 Geometrical Paces, or 40 Common Paces."—(Fyer's "Notes," pp. 63-85.)

War had at this time once more broken out between Great Britain and Spain, owing to the right of search claimed by the latter country, and on March 14th, 1740, a Warrant was signed for an Ordnance Train to accompany the expedition then forming under Lord Cathcart to sail in the fleet under Admiral Vernon. To this Train one Chief and ten Engineers were attached. Colonel Lascelles was, in the first instance, named to take the command of the Engineers; but it proved inconvenient to the service to spare him, and Jonas Moore, the Chief Engineer of Gibraltar, was selected in his place.

* Writer's italics.

By Warrant of July 24th, Captain Jonas Moore was authorized to take up the command of the Artillery attached to the expedition in the event of any casualty occurring to either of the artillery officers, Colonel Jonas Watson or Major Jonathan Lewis. (War. and Ord. in Exped. 1740-60, p. 7.)

The following are the names of the other ten Engineers, of whom the first five were on the establishment, and the other five warranted for the expedition only:—Thomas Armstrong, Samuel Speed, Simon Elliot (not to be confounded with G. A. Eliott, afterwards Lord Heathfield), Justly Watson, John Thomas, John Saye, Hugh Mackay, William Blane, Thomas Innes, William Cunningham. Three other Engineers were afterwards added at their own request, who served as Volunteers without pay, viz., Charles Campbell (on the establishment), Patrick Clark, and Charles Knowles.

The fleet with the land forces on board arrived at Jamaica on January 9th, 1741; but the *Buckingham* having been disabled in a storm was ordered back to England to refit, and Thomas Innes, who was on board, returned with her, thus reducing the number of Engineers with the force to thirteen, including the volunteers.

Before Jamaica was reached the land force had suffered the irreparable loss of its commander, Lord Cathcart, who died at Dominica. He was succeeded by General Wentworth, an officer by no means fitted to cope with the difficulties of the situation. From the very commencement there had been jealousies and disputes between the naval and military commanders. Wentworth's weakness and inability to cope with Admiral Vernon proved in the event most disastrous.

The point of attack was Cartagena, a strongly fortified place, the garrison of which was at the time reinforced by the crews of some of the Spanish fleet. The Governor was Don Blas de Leso, an officer of much experience. The harbour of Cartagena, called the Boca Chica, was protected by several outlying forts, called St. Louis, St. Philip, St. Jago, and the Chamba, which it was necessary to reduce before the fleet could enter.

The troops were landed on March 9th at Playa Grande, to the west of Cartagena, and trenches with batteries were at once thrown up by Thomas Armstrong against St. Louis. Moore, in the *Wiltshire*, had been driven by a storm to leeward, and did not land and assume command until the 11th, so that for the first three days Armstrong had the conduct of the siege. The difficulties encountered in carrying on the works were very great. The pioneer force consisted of a body of negroes, with some white Americans, supplemented by the troops as required. Twenty carpenters from the fleet were also added to Moore's command, for laying platforms

and other engineering artificer's work. The negroes were found very difficult to deal with, and it was almost impracticable to get them to work under fire. The result was that the whole brunt of the labour fell on the troops. Sickness soon broke out, owing to the intense heat and the extreme unhealthiness of the spot where the operations were being carried on. The Engineers in consequence found themselves encompassed with difficulties. They demanded assistance from the fleet, but this the Admiral steadfastly refused to grant. They were therefore compelled to do their best without it, and were warmly seconded by the troops, who toiled on with the utmost good will, though amid ever increasing sickness and privation. A battery of casks filled with sand was thrown up between the forts of St. Philip and St. Jago for forty mortars and coehorns. This was opened on March 13th, the same day on which the main battery for twenty 24-pounder guns was begun. This was constructed in the midst of a dense wood, and when finished was unmasked by clearing away the underwood in its front. It opened fire on the 22nd, and on the following day Jonas Moore, whilst looking through one of the embrasures, was killed. Armstrong then assumed the command, which he retained till the close of the operations. The Fort of St. Louis had been isolated by cutting off its communications with the town, and the effect of the batteries soon rendered it practicable for an assault. This was delivered in the afternoon of March 25th, when the fort was captured. Justly Watson was the Engineer appointed to accompany the storming column. As soon as the troops had fairly entered, Engineer William Blaine was instructed to destroy the boom across the mouth of the harbour, the end of which had been covered by the work. This was speedily accomplished, and then the fleet was able to enter the port.

Up to this point all had gone well. The outlying forts had been abandoned, and it only remained to capture Fort St. Lazar, the citadel of the town, to complete the success. Here, however, the jealousies between the naval and military commanders broke out once more, and each seemed more anxious to disgrace his rival than to carry out the enterprise to a practical conclusion. The admiral declared that the general could capture the fort by assault without assistance, whilst the general complained bitterly that so powerful a fleet was suffered to lie idle in the harbour, whilst the whole burden of the operation was thrown upon his troops, weakened as they were by casualties, hard work, and sickness.

Armstrong was of opinion that the fort should be approached by trenches in the usual way, and not stormed until a practicable breach had been established. This was opposed by the admiral, who scoffed at the prudential advice of the Engineer.

Stung by his sarcasms Wentworth decided to attempt the work by escalade. In this he was much guided by the reports brought in by several Spanish deserters, which were corroborated by the observations of some of the Engineers. These, having crept up to the fort by night, stated on their return that the walls were not too high to admit of escalading, that there was no ditch, and that the road up to the hill on the right was broad and easy of ascent. The orders were given, and a column of twelve hundred men, led by General Guise, was guided to the spot by a deserter.

Whether the man was acting treacherously or in reality missed his way is doubtful, but when day broke on April 9th the troops found themselves opposite the very strongest front of the fort, and, what made the position the more desperate, the ladders proved too short. The attempt was a complete failure, and after a loss of 600 men killed and wounded, they were forced to retire. Justly Watson, who at the time held only an Ensign's commission in the army, so greatly distinguished himself in this unfortunate affair that the General gave him a Lieutenant's commission as a reward. This was recorded under date, Head-quarters, La Quinta, April 10th, 1741, and named him Lieutenant in Major-General Harrison's Regiment of Foot (Comm. Book in W. O., 1740-44, p. 249).

The result of this disaster was the abandonment of the undertaking; the troops were embarked on April 16th, and set sail for Jamaica. The Engineer losses in this unfortunate and grossly mismanaged affair were Jonas Moore, Simon Elliot, John Saye, and Patrick Clark. Captain John Selioke, an Engineer on the old establishment, served with his regiment in the expedition, and died from the effects of the pestilential climate shortly after his landing at Jamaica, as did also Peter Laprimaudaye, who acted as Paymaster in the force.

The miscarriage of this attempt was no sooner known in England than a vehement outcry was made. A vast sum of money had been expended to ensure success; the disappointment was therefore the more acutely felt. A pamphlet was promptly issued called "An Account of the Expedition to Carthagena, with Notes and Observations." This was evidently inspired if not written by Admiral Vernon, and the military received unmeasured abuse. This is what was said of the Engineers:—

"And for the engineers, bombardiers, and gunners, worse never bore the name or could be picked out of all Europe. Amongst the ten engineers there was but one who ever saw a siege, and that was the simple siege of Gibraltar (in 1727), and he was killed at Bocca Chica, in the midst of his own defenceless works, so that the rest may justly have been said to be left without a head. As for the bombardiers and gunners,

the colonel commanding the train was in his grand climacteric, and consequently very unfit to be sent on this Expedition."

A reply was speedily forthcoming, in which the cause of the Engineers was warmly taken up:—

"The principal engineer, Mr. Moor, was deservedly esteemed for his bravery, his capacity, and skill in his profession; the battery on which he was killed viewing the effects of a shot through an embrasure was well constructed, and fully answered the end for which it was raised. He had served with applause in the defence of Gibraltar, one of the principal fortresses of Europe, which was attacked by an army of 40,000 men, composed of the best troops of Spain, and battered by 100 pieces of large cannon, yet that army was by the gallant defence of the garrison obliged to retire, after having been almost totally ruined at this *simple* siege, as the author of the pamphlet is pleased to term it. Mr. Armstrong, the gentleman who succeeded as principal engineer on the death of Mr. Moor, had all the experience which could possibly be acquired in time of peace, having been continuously employed during 16 years in the different works about the kingdom, nor could any person whatsoever perform his duty with greater attention, or more cheerfully expose his person whenever he thought his presence could in any wise contribute to the public service. It is certain that no more than two of the sub-engineers had ever served in the face of an enemy, which surely ought not to be imputed to them as a fault, when after so long a peace few or none qualified were remaining. But nothing had been omitted by those gentlemen to repair their want of experience, both by their application to the study of their profession at home, and by visiting the fortifications in foreign parts, and when on real service it was very evident that they spared no endeavour to make up that deficiency by their diligence and gallant behaviour. Nor is there the least room to doubt but that the *few* who have returned from that fatal expedition will, whenever they shall be called upon, be found qualified to do effectual service to their country."—("Expedition to Carthagena, with Notes. In answer to a late pamphlet, entitled, An Account of the Expedition to Carthagena." Pamph., 8°, 1744.)

In this year the first step was taken towards the establishment of a military school for officers of the Artillery and Engineers, which eventually developed into the Royal Military Academy of Woolwich. On March 10th, 1741, the Officers of the Board of Ordnance wrote thus to the Master-General:—

"Being of opinion it would greatly conduce to the good of H. M. service, both by sea and land, if an Academy or School were instituted, endowed and supported for instructing the raw and inexperienced people belonging to the Military Branch of this Office in the several parts of Mathematicks necessary to qualify them for the service of the Artillery and the business of Engineers, and there being a convenient room in Woolwich Warren, the property of His Majesty, which may be fitted up for that purpose at a small expense. We therefore beg leave to represent

the same to your Grace, and to desire you to intercede with His Majesty that he will be graciously pleased to empower the Master-General of the Ordnance for the time being to constitute an able and skilful Master and Assistant to instruct the said people accordingly. Also to provide such an apparatus of instruments, books, and other necessaries, as may be judged proper, for the use of the said Academy or School, the charge of all which, not exceeding £500 per annum, communibus annis, to be defrayed out of such money as shall be paid into the Treasury of this Office, either for land or sea service. We are, &c.,

"(Sd.) Chas. Wills, John Armstrong, Geo. Gregory, W. R. Earle."

—(Lett. Mast.-Genl., vol. viii., p. 127.)

The result of this application was the issue of a King's Warrant, dated July 30th, 1741, by virtue of which the Royal Military Academy was founded. The Master-General drew up the first rules for the government of the new school, which were duly acknowledged by the Board in a letter dated August 22nd, 1741.

On April 15th, 1742, Major-General John Armstrong, Surveyor-General of the Ordnance, Chief Engineer of Great Britain, Deputy Lieutenant-General of the Ordnance, Quartermaster-General of the Forces, and Colonel of the Royal Irish Regiment, died at the Tower of London. He was buried in the graveyard of the church within the Tower, and a monument was erected to his memory by George II. This, together with many other similar memorials, has long since disappeared to make way for a military parade ground.

He was succeeded in most of his offices, including that of Chief Engineer of Great Britain, by Thomas Lascelles.

The King had at this time decided to send an army under the Earl of Stair to the support of Queen Maria Theresa. For this purpose a force of 16,000 men was ordered to be embarked for Flanders, where they were to be joined by 6,000 Hessians. A Warrant, dated August 19th, 1742, was issued for an Ordnance Train to accompany the expedition. The Engineers for the Train were Henry Pinkerton, George Augustus Eliott, Samuel Speed, and Leonard Smelt, to whom were afterwards added Edward Fenner, and David Watson. The campaign proved of slender interest from an Engineer point of view. At the battle of Dettingen, which was fought on June 27th, 1743, five Engineers were present with the Train, which was under the command of Colonel Thomas Patterson. Eliott was with his regiment, and was severely wounded. Matthew Dixon was also present, though not at the time serving as an Engineer. At the muster on December 3rd, 1743, all the Engineers were in winter quarters at Ghent except Samuel Speed, who had returned to England.

In 1745 we find that the Engineers in Flanders were Eliott, Smelt, Fenner, David Watson, Thomas Junr., Bramham, and

William Green. In addition to these there were several others serving with the Train, but their names cannot be traced. Those mentioned were all at the battle of Fontenoy on May 11th, 1745, where they threw up some hasty entrenchments, as well as some batteries. Eliott did duty with his regiment, the Horse Grenadier Guards, and was again badly wounded. Soon after the battle, Captain Frederick Scott, who expressed a special desire to serve as an Engineer with the Train, was warranted as such, with the rank of Engineer Extraordinary until a vacancy should occur, when he was to be promoted to the position of an Engineer in Ordinary. David Watson and William Cunningham were both present at the unsuccessful defence of Ostend, which surrendered after a short siege on August 13th, not without suspicion of treachery on the part of the Dutch governor of the place.

Meanwhile the Corps had been gradually developing and reaching the dimensions that it was intended it should assume. In 1744 the following promotions took place in consequence of the further vacancies that had arisen on the old lists, viz. :—James Wibault to be Sub-Director, Leonard Bickerstaffe, John Henry Bastide, Justly Watson, Dougal Campbell, Samuel Speed, and William Cunningham to be Engineers in Ordinary ; Archibald Patoun, Leonard Smelt, George Augustus Eliott, John Armstrong, Patrick Mackellar, and William Cowley to be Engineers Extraordinary ; Kane William Horneck, John Pinkerton, David Watson, Edward Fenner, Charles Rivers, and Matthew Dixon to be Sub-Engineers; and Charles Parkinson, James Bramham, John Hardesty, William Green, William Eyre, and the Hon. John Elphinstone to be Practitioner Engineers.

On the American continent for several years there had been constant employment for the Engineers, either in connection with the work of fortification, which was continually being carried forward at all the more prominent stations, or on active service in the numerous minor expeditions which were from time to time undertaken. In this year, however, an operation of some importance was carried out which merits special mention. This was the capture of the Island of Cape Breton, which resulted from the siege and reduction of Louisburg. The project had been drawn up by the Colonial Government, who levied a force of some 4,000 men at Boston. These were placed under the command of a local trader named Pepperell, who, although utterly deficient in military training, was entrusted with the conduct of the war from a strong belief in his intrepidity and general capacity. The British fleet of four men-of-war, under the command of Commodore Warren, was directed to co-operate with the land forces, which were reinforced by 1,000 marines from the ships at the station.

The garrison of Louisburg consisted of 1200 men of the French regular army, under the command of Monsieur Chambon. The place was strongly fortified, mounting in its various outlying batteries and in the enceinte itself no less than 150 guns and ten mortars.

The attacking force landed at Louisburg on May 1st, 1745, and ground was at once broken. At this time there were no British Engineers with the troops, Colonel Richard Gridley, a colonist, being placed in charge of the siege operations. As he, however, possessed a very slender knowledge of the nature of the works necessary to be thrown up, Pepperell, who was himself also utterly ignorant of the matter, wrote to John Bastide, the Engineer in command at Annapolis, to send him professional help as quickly as possible. Bastide determined to proceed thither himself, and took with him William Cowley to assist in the attack. They arrived before the place on June 5th, and from that date till the surrender of the fort on the 17th of the month, Bastide conducted the operations with a spirit and efficiency which elicited the warmest approval of Pepperell and Commodore Warren.

The island having thus fallen into the possession of Great Britain, Bastide was directed to carry out such repairs as were immediately necessary, and to make a report as to the expenditure that would be required to place its works in a proper state of defence. This he did, asking for a total sum of £9,033 8s. 6d. The Board of Ordnance, to whom this estimate was referred from Whitehall, replied that as Louisburg was not on their establishment they had nothing to say to Bastide's estimates, except to remark that as they were framed in haste with little insight into the expense of colonial labour, and the nature and extent of the materials procurable on the spot, it would probably be found in the execution of the several services included in the estimate that the amount would be largely exceeded. (Letters Mast. Genl., vol. xi. p. 72.)

For his conduct during this siege, Bastide, who at the time only held the military rank of a lieutenant in Sowles' Regiment, was given a company in Shirley's Regiment, then about to be formed. He was also warranted on October 16th as Chief Engineer of Louisburg, leaving Cowley in charge at Annapolis.

The result of the various campaigns that had taken place in North America was to leave in the hands of the British many strong points which had from time to time been wrested from the French. Each of these had been occupied by detachments, both of Artillery and Engineers. It was now determined to consolidate them into a Train of two companies, one for service in Newfoundland, the other for Nova Scotia and Cape Breton.

The Engineer establishment for this Train was to be—for each

station, one Chief Engineer, at 20s. a day; one Engineer in Ordinary, at 10s.; and one Engineer Extraordinary, at 6s.

There were at the time four Engineers at these places. James Wibault became Chief Engineer at Newfoundland; and, as has already been stated, John Bastide was given the similar post at Louisburg; John Brewse became Second Engineer at Newfoundland, and William Cowley at Annapolis; leaving vacancies for two Engineers Extraordinary to be sent from England.

On August 11th, 1745, the Scotch Rebellion once more broke out, the Young Pretender setting up his standard on that day. His Chief Engineer was an Irishman, Colonel Sullivan. Hostilities began with an attack upon a small force under the command of Frederick Scott, who had only a few months before been appointed Engineer Extraordinary in Flanders. Being taken by surprise, some of the force were compelled to surrender, but the remainder with their commander made good their retreat to Fort William.

At this time only three Engineers can be traced as being in Scotland, viz., Dougal Campbell, John Elphinstone, and the abovementioned Scott. It is probable, although no distinct record of the fact exists, that the former was present at the defence of the Castle of Edinburgh, which held out after the Chevalier had occupied the city. This defence was very energetically carried on, and the castle successfully held until the rebel force moved southwards. Carlisle soon fell, and the advance of the Scotch appeared so dangerous that the authorities were forced to bestir themselves. The Governor of Hull promptly applied for an officer skilled in the art of engineering to superintend the townspeople in restoring the fortifications which had been allowed to fall into a ruinous condition, and which the inhabitants were beginning to put in order at their own cost. Peter Henry Bruce, who had recently returned home from the Bahamas, was told off for this duty, and he arrived at Hull on October 8th. On the following day he made his inspection accompanied by the Governor (Lieutenant-General Jones) and the municipal authorities. He was surprised at the amount of work that had been done, and the judicious way in which it had been directed. The moats had been deepened, the ramparts repaired, the embrasures restored, and the magazines placed in order. In fact it seemed (as he said) as though the work had been guided by a skilled Engineer. He had nothing to do but to follow in the lines so ably begun, and with the help of all concerned Hull was soon declared to be in a state fit to resist all attack (Bruce's "Memoirs," p. 444).

When this was finished Bruce joined the head-quarters of Marshal Wade's army at Doncaster, which he accompanied in its various movements until it wintered at Newcastle.

The continued advance of the invading army caused a panic even in London, and on December 13th the Duke of Newcastle drew the attention of the Master-General and Board to the necessity of adopting some defensive measures to protect the city. The Board on this sent the following report on the subject, dated December 26th, 1745 :—

"My Lord—Your Grace having been pleased to refer to us an extract of a letter from his Grace the Duke of Newcastle, bearing date the 13th inst., notifying to your Grace His Majesty's pleasure that you should cause the several entrances into the cities of London and Westminster to be examined, and to consider forthwith what may be the most effectual means of stopping up or obstructing the same in case of necessity. We have accordingly, my Lord, caused the entrances to be examined by two of His Majesty's Engineers, whose report we have received in relation thereto, and having considered the same we are of opinion that the only effectual method to be taken for the security of the said cities and suburbs will be by erecting forts and redoubts at convenient places, upon or near the principal avenues, and then join the same by a line of communication with small bastions or redans at proper distances, which will encompass the whole cities and their suburbs, such as were thrown up in the year 1642, and are delineated upon the enclosed plan, which is humbly submitted to your Grace by my Lord, &c., &c.

"(S^{d}.) "Thos. Lascelles, Geo. Gregory, W. R. Earle."

(Lett. Mast.-Genl., No xi., p. 125.)

No trace can now be found of the report or plan referred to, nor of the names of the Engineers employed. As the rebel army after reaching Derby began its retrograde movement, the necessity for throwing up these works ceased, and no more was heard of the matter.

Engineers Armstrong, James Campbell, and David Watson were present at the siege and recapture of Carlisle by the Duke of Cumberland. The place was invested on December 20th, but no active measures could be taken till the guns arrived from Whitehaven, which was not till December 27th. That same night a battery was thrown up on Primrose Hill for six 18-pounders, the army furnishing working parties under the Engineers, and on the 29th, another battery for three 13-pounders was also completed. The effect of the fire of these two works was such that on the 30th the garrison surrendered. Amongst the prisoners was the Engineer Colonel Strickland of Toulouse. He was conveyed to London in a coach, and lodged in the Marshalsea Prison on February 10th, 1746 ("Gent. Mag.," 1746, vol. xvi. p. 105).

At the battle of Falkirk on January 18th, 1746, Captain John Romer and Captain David Watson of the Engineers were present with their regiments, Watson acting on General Hawley's staff.

Although the English suffered a severe defeat, Watson must have distinguished himself, since he was made Deputy Quartermaster-General of the forces in North Britain, and his commission was dated on the day of the battle. By this appointment he became a Lieutenant-Colonel in the Army.

The town of Stirling had fallen into the hands of the rebels on January 5th, but the castle was held firmly by General Blakeney, who had with him Dougal Campbell and John Elphinstone.* After a feeble attempt at its capture, which lasted till the place was relieved by Hawley, the rebel force abandoned the siege. Their success at the battle of Falkirk induced them to resume it, and ground was once more broken against it, desperate efforts being made to overcome Blakeney's resistance. Supported by his Engineers, he was able to hold the place, until the arrival of the Duke of Cumberland, on January 30th, compelled the Pretender to raise the siege.

Charles Edward then retired on Inverness, and captured in succession Fort George and Fort Augustus. The former had been designed and constructed by John Romer, the Engineer, at a cost of about £50,000, and it was now blown up by order of the Prince. The French Engineer who had charge of the operation, Monsieur Mirabelle de Gordon, was killed by the explosion. Fort Augustus was destroyed in a similar manner, after which siege was laid to Fort William. Here the Engineer Scott was in command, and he was not prepared to surrender his charge so readily as had been the case at the two above-mentioned forts. When the rebels first appeared in the vicinity of the place he was absent, and it was not till after much difficulty and the delay of several days that he was able to rejoin his garrison. Once within the works he maintained a stout defence, keeping up a heavy fire on the besiegers' works, and at last making a dashing sortie, in which he destroyed one of their most important batteries. The result was that on April 3rd the attempt was abandoned and the rebels retired, leaving eight guns and seven mortars behind them. "It were wished," said one writer, "that the several fortifications had had commanders of equal merit." For his gallant conduct in this defence Scott was rewarded by a Majority in Guise's Regiment of Foot in the place of Major Wentworth, cashiered for having surrendered Fort Augustus ("Lond. Gaz.," Mar. 18-22, 1746).

On April 8th the Duke of Cumberland quitted Aberdeen and marched northward, intending to crush the rebellion by a general

* It is assumed that these two Engineers were with Blakeney, because, in the British Museum there are plans of Stirling, showing details of the attack, by both of these officers.

action. This he successfully accomplished at the battle of Culloden. The Engineers with the Duke on this occasion were David Watson, Dougal Campbell, John Elphinstone, William Eyre, Daniel Paterson, Lewis Marcelle (one of the Irish Establishment), and John Romer, who was severely wounded. Elphinstone and Paterson have both left plans of the battle, one of which is in the King's Library at the British Museum, and the other in the Office of the Inspector-General of Fortifications. The rebellion was now at an end, and nothing was left for the Engineers but to do their utmost in the restoration of the ruined defences of the kingdom.

The success with which the late attack on Cape Breton had been crowned led the British Government to contemplate the conquest of Quebec, the capital of Canada. They therefore decided upon fitting out an expeditionary force from England, which on its arrival in America should be joined by colonial troops, to be raised for the purpose. General St. Clair was named for the command of the land forces, and a Warrant was issued on May 7th, 1746, for an Ordnance Train to accompany them. The command of this Train was given to Thomas Armstrong, who was also to be the Chief Engineer. Under him were John Thomas, Justly Watson, Robert Clerk, and William Green. John Armstrong, who had already been appointed for service at New York, was also directed to join the Train prior to proceeding to his station. Two Engineer Cadets, Hugh Debbieg and William Bontein, were likewise ordered to accompany it in furtherance of their military education.

Great delays arose before the force could be brought together, and at length it was decided that the season was too advanced to permit of the operation being undertaken during that year. In order, however, that the extensive preparations which had been carried on should not prove entirely useless, it was determined to make a descent on the coast of Brittany, and attack L'Orient, the port where all the ships and stores of the French East India Company were assembled. With this view the fleet set sail from Plymouth on September 14th, and five days later the troops were landed in Quimperley Bay, ten miles from L'Orient, whence they were marched in two columns to the point of attack. The General at once sent Armstrong and Justly Watson to reconnoitre the town, and they, on their return, reported that the place was only defended by a thin loopholed wall without any ditch. They added that they had selected a site for a battery, from whence they could either make a breach or lay the town in ashes in twenty-four hours. Early on the morning of the 22nd, General St. Clair made a personal reconnaissance, in company with Armstrong and

Watson, who adhered firmly to their previously expressed views. Thereupon a council of war was held on board the *Princessa*, the flagship of Admiral Lestack, at which the two Engineers and Captain Chalmers, of the Artillery, were present. These three officers, being all of the same opinion, it was decided to make the attempt, and orders were issued to that effect. The result proved that they were grossly in error in their views. Without a proper strength of artillery, without ammunition or stores in anything like a sufficient quantity, they plunged into the affair only to find that when they had fired away almost all their shot, they had made no real impression on the works. Much dispute and recrimination arose, and several fresh councils were held. Ultimately it was decided that the Engineers had made a wrong calculation, that the men had suffered great fatigues, and that the prospects of success were not sufficiently good to warrant a continuance of the siege. The attempt was consequently abandoned on September 27th, and on the following day the troops were re-embarked. There is no doubt that the failure of this attack reflected much discredit on both Armstrong and Watson, who seem to have considerably underrated the strength of the place and its powers of resistance. The means which the assailants could command were ridiculously inadequate to the purpose, and, as has well been observed:—

"Nothing could be more absurd or precipitate than an attempt to distress an enemy by landing a handful of troops, without draught-horses, tents, or artillery, from a fleet of ships lying in an open beach, exposed to the uncertainty of the weather, in the most tempestuous season of the year, so as to render a retreat and re-embarkation altogether precarious."—(Cust's "Annals of the Wars of the Eighteenth Century.")

The war in Flanders had for some time been prosecuted with great languor. It was now determined to push it with vigour. The Ordnance Train had become much reduced in the course of time. It was therefore to be remodelled, and for this purpose a new Warrant was issued dated February 3rd, 1747, in which a "Brigade of Engineers" was ordered to be employed under the command of H.R.H. the Duke of Cumberland. The appointments made under this Warrant were:—

Dougal Campbell, Chief Engineer, at 15s. per day.

John Thomas .. ..
William Green .. ..
James Bramham .. .. } Engineers in Ordinary,
William Eyre .. .. } at 10s. per day.
Robert Clerk .. ..
John Heath .. ..

William Hall	Engineers Extraordinary, at 5s. per day.
George Morrison ..	
Harry Gordon	
Hugh Debbieg	
John Baugh	
William Bontein ..	
Daniel Paterson	
Thomas Waller	

The Warrant also directed a company of Miners to be organized, to consist of two lieutenants, two sergeants, four corporals, and thirty-four miners.

The battle of Val or Lafeldt was fought on July 2nd, and the whole brigade of Engineers was present. Captain Heath was taken prisoner, and William Green wounded. Hugh Debbieg served on the staff of the Duke throughout the day. George Massy, who was an officer of the company of Miners, wrote thus on the occasion :—

"I was ordered with some waggons of intrenching tools into the village" (Val), "under Captain Heath, who was taken prisoner. I remained in the village, and was taken and retaken three times. The village was set on fire, but was ordered to be extinguished by His Royal Highness. In bringing off my waggons I was wounded in the leg by a musquet spent ball, and lost my two waggons : the drivers ran away."—(Massy's "Travels and Voyages," 1746-68, MS. p. 22.)

This battle was followed by the siege of Bergen-op-Zoom, which began on July 10th, by the French under Count Löwendahl, the garrison being composed of Dutch and English troops, 3,000 in number, under the command of the governor, Baron Cronström. There is no record showing a complete list of the British Engineers present, but the following names are gathered from various sources :—William Green, Robert Clerk, Hugh Debbieg, and William Bontein.

The first British Engineers were sent into the town on August 6th, and a week later their number was increased, a company of the Train having then arrived. Others were afterwards sent from England, who landed in September. Perhaps the most important addition was Benjamin Robins, whom the Stadtholder obtained through the Earl of Sandwich, and who was made Chief Engineer with the Dutch troops. On August 25th Admiral Anson wrote of him :—

"I believe he is a perfect master of all the theory of that science . . . He has an excellent understanding and great firmness of temper, and therefore I think he will do well."—("Corresp. of John 4th D. of Bedford," i. 241.)

Robins set out for Holland on August 27th, and soon finding

an entrance into the fortress, assumed the office for which he had been selected.

The attack was most vigorous, and the defence very determined. Löwendahl lost a vast number of men from the unceasing and heavy fire which was brought to bear on the trenches by the garrison. Mining also was freely resorted to, and in many instances with much effect. One of the mines was fired on August 11th, by Captain Bontein. The enemy had made an assault on the lunette of Zealand. Bontein, who had his mine ready prepared, fired it at the right moment, and destroyed two hundred of the assailants, who were so dismayed that they abandoned the attack. He himself was wounded in the shoulder. ("Lond. Gaz.," 8,665, Aug. 8-11, 1747.)

"From the 16th of July to the 15th September, the siege produced an unintermitting scene of horror and destruction: nothing was to be seen but fire and smoke, nothing heard but the perpetual roar of bombs and cannon—the town was laid in ashes, the trenches filled with carnage." —(Cust, ii. p. 121.)

The place was after all taken almost by surprise, an assault being made at a point where the breaches were not considered practicable, and where, therefore, the precautions taken were not so complete as they should have been. This occurred on September 16th, on which occasion Robert Clerk was taken prisoner. He saved his life by proclaiming that he was a relative of Count Löwendahl. When brought before the Count he admitted the stratagem, which he said was the means of preventing his captors from bayoneting him. Löwendahl was much amused, and gave him some money to present to the soldiers who had taken him. (Walpole's "Hist. of George II.," by Lord Holland, iii. p. 43.)

The garrison generally made their escape from the town after a desperate fight, in which the loss on both sides was very great.

Charles Bisset, a lieutenant of the 42nd Highlanders, had taken an active part in the siege as a volunteer assistant Engineer, and had shown such energy and capacity that he was afterwards warranted as an Engineer Extraordinary in the Train.

We this year find the first trace of the employment of British Engineers in India. On October 27th, 1747, a Warrant was issued for a Train to accompany Admiral Boscawen's expedition to the East Indies. To this Train were attached the following: — Leonard Bickerstaffe and Edward Jenner as Chief Engineers at 20s., and Matthew Dixon and John Apperly as Engineers at 10s. Unfortunately, the results of the undertaking were not such as to add to the renown of the Corps. Boscawen attacked Pondicherry; but in spite of the zeal of his Engineers the siege proved a failure. The French Engineer, Paradis, was more

than a match for them, although his own life was sacrificed to his valour, he having been killed in a sortie on September 1st. Boscawen was compelled to raise the siege on October 6th, having lost upwards of 1,000 men.

The treaty of Aix-la-Chapelle, which was signed on October 18th, put an end to the war on terms not very satisfactory to England. Engineers John Heath and Robert Clerk, who had been prisoners of war, were surrendered without ransom or exchange. All the men who served on the Flanders Train, and were not on the permanent establishment, were reduced, two of them, Thomas Waller and Richard Dawson, being placed on half-pay, with a view to their ultimate absorption into the general roster.

This chapter may be closed with a list of the Corps as it stood on April 16th, 1748.

		Date of Appointment.
Chief Engineer,	Thomas Lascelles	July 1st, 1742.
Directors . .	William Skinner	Sept. 30th, 1746.
	John Henry Bastide . .	Jan. 2nd, 1748.
Sub-Directors	Justly Watson	„ „ „
	Dougal Campbell	„ „ „
Engineers in Ordinary	Leonard Bickerstaffe . .	Mar. 8th, 1744.
	William Cunningham . .	„ „ „
	Archibald Paterson	Jan. 2nd, 1748.
	Leonard Smelt	Jan. 3rd, „
	George Augustus Eliott . .	Jan. 4th, „
	John Armstrong	Jan. 5th, „
Engineers Extraordinary	William Cowley	Mar. 8th, 1744.
	Kane William Horneck . .	Jan. 2nd, 1748.
	David Watson	Jan. 3rd, „
	Charles Rivers	Jan. 4th, „
	James Bramham	Jan. 5th, „
	John Hardesty	Jan. 6th, „
Sub-Engineers	Matthew Dixon	Mar. 13th, 1744.
	William Green	Jan. 2nd, 1748.
	William Eyres	Jan. 3rd, „
	The Hon. John Elphinstone	Jan. 4th, „
	John Archer	Jan. 5th, „
	George Weston	Jan. 6th, „
Practitioner Engineers	William Bontein	April 2nd, 1748.
	George Morrison	„ „ „
	Harry Gordon	„ „ „
	William Hall	„ „ „
	John Baugh	„ „ „
	Hugh Debbieg	„ „ „

GIBRALTAR.

Chief Engineer . .	James Montresor . .	Jan. 2nd, 1748.
Practitioner Engineer . .	John Manson . .	April 16th, 1748.

MINORCA.

Chief Engineer . .	Thomas Armstrong .	Jan. 11th, 1748.
Engineer in Ordinary . .	Patrick Mackellar . .	Jan. 2nd, ,,

These thirty-three were all on the establishment, as by Order in Council of August 22nd, 1717.

Besides them, there were the following special appointments on that date, viz.:—

LOUISBURG.

Engineer Extraordinary . . John Fleming.

ANNAPOLIS.

Sub-Engineer . . . . William Comburn.

NEWFOUNDLAND.

Chief Engineer . . . . Lieutenant-Colonel William Cooke.
Second Engineer . . . . John Brewse.
Engineer Extraordinary . . Adam Gabriel Fournier.

GEORGIA, AND SOUTH CAROLINA.

Engineer . . . . . James Campbell.
Sub-Engineer . . . . Griffith Williams.

RATTAN.

Engineer . . . . . Thomas Eyre.

JAMAICA.

Engineer . . . . . Archibald Bontein.

INDIA.

Chief Engineer . . . . Edward Jenner.
Engineer in Ordinary . . John Apperly.

FLANDERS.

Chief Engineer . . . . John Heath.
Engineer in Ordinary . . Robert Clerk.
Engineers Extraordinary . . Daniel Paterson, Thomas Waller, Richard Dawson, and Charles Bisset.
Practitioner Engineer . . Richard Dudgeon.

CHAPTER VIII.

1748-1763.

Military Survey of Scotland under Watson and Roy—Grievances of the Corps—Their Agent Boddington—War in America with the French—Braddock's Disaster—Victory at Crown Point—Augmentation in 1755—The Roster on that Date—Military Reconnaissances in the South of England—Cunningham at Minorca—Siege of St. Philip's—Its Capture by the French—Dutch Engineers in America—Military Rank granted to the Engineers in 1757—Chief Engineer Skinner's Commission—Expeditions against Rochefort, St. Malo, and Cherbourg—War in America—Capture of Louisburg—Failure at Ticonderoga—New Establishment of Engineers in 1759—Capture of Guadaloupe—Attack on and Capture of Quebec—French Attempt to recover the Place—Capture of Martinique, the Havannah, and Belleisle.

One of the results of the Scotch rebellion of 1745 was the compilation of a map of the Highlands, which became the precursor of the Ordnance Survey of Great Britain. This was begun by Lieutenant-Colonel David Watson in the winter of 1747. He had brought forward a project for the subjection of the clans, which was warmly received.

"I believe," wrote Fox, "Watson's scheme to be an exceedingly good one, and under your directions will, I doubt not, prove effectual to a service that is of the last importance."—(To General Blakeney, Sept. 1, 1747. Lett. Bk., vol. 171, p. 31. W. O.)

Again, he wrote a fortnight later:—

"Having had the honour to transmit to His Royal Highness . . . . Watson's letter for preventing the depredations of the thieving Highlanders, which you were pleased to send me. . . . I am to acquaint you that H.R.H. approves thereof, and thinks it should be put in execution."

This scheme involved the survey of the country and the cutting of roads to permit patrolling by small armed parties encamped at certain salient points, from whence a network of tracks was to be opened in different directions.

The control of the survey was given to Watson, who was made Deputy Quartermaster-General in Scotland for the purpose. He was placed under the direct orders of the Duke of Cumberland.

who took a warm interest in the work. In a letter from Fox to General Bland, of April 9th, 1748, he alludes to a communication from Colonel Yorke, of the 4th of that month, conveying the Duke's command, "that the two Engineers who are gone down to Scotland to help Watson in his survey of the country are to have 5s. a day." These were not really Engineers but rather draughtsmen. One was Paul Sandby, who made a name afterwards as a painter, and the other John Manson, who was before long brought into the Corps.

William Roy is first mentioned in connection with this survey in a letter dated August 15th, 1749, at which time he held the appointment of Assistant to the Deputy Quartermaster-General. Roy shortly afterwards received his Warrant as Practitioner Engineer. The result of the labours of Watson and Roy is to be seen in what is called the Duke of Cumberland's map, now in the British Museum. It is thus described by Sir Frederick Madden :—

"A very large and highly-finished coloured military survey of the Kingdom of Scotland, exclusive of the islands, undertaken by order of William Augustus, Duke of Cumberland, and executed by Lieuteuant William Roy and other officers, under the superintendence of Lieutenant-Colonel David Watson, Deputy Quartermaster-General of the Forces in 1747–1755; about 2 inches to a mile, divided into 38 compartments, contained in 8 cases: a small map is attached, marked with corresponding divisions, to serve as a key to the arrangement."

In the year 1750 Colonel Thomas Lascelles was permitted to retire from the Ordnance Service, his age rendering him no longer capable of continuing the onerous duties attending his offices of Surveyor-General and Chief Engineer. He was succeeded in the former of these appointments by Charles Frederick, Esq., who had no connection with the Corps. From this time the post of Surveyor-General became disconnected from the Engineers, and was always afterwards filled by a Government nominee, removable on change of Ministry. The post of Chief Engineer was for some years left vacant, greatly to the discontent of the Corps, who considered that they were unfairly treated by the Master-General and Board, in thus depriving them of the highest and most coveted appointment to which they could aspire.

They had at this time many causes for dissatisfaction. Their position as Engineers had never been properly defined, and the Board had not been sufficiently zealous in claiming for them their due rank. The Warrants under which they held office were not recognized as giving them a regular military status; and when, as often occurred, they did not hold any separate army commission, they felt that they were in an anomalous situation. This had for many years been partially overcome by giving them commissions

in various regiments or on the staff of the army; but even so there were difficulties. The colonels of the regiments to which they were posted constantly called upon them to relinquish their Engineer duties and rejoin their regiments, and this, in spite of their position in the establishment of Engineers, they were sometimes compelled to do.

Now they took the opportunity of this fresh grievance in not filling up the vacant post of Chief Engineer, to make an appeal from the Board of Ordnance, direct to the Duke of Cumberland as head of the army. Their petition was that he would intercede with the King to confer on them army rank. The assimilation of the grades of Engineers to the other ranks of the army by Commissions from His Majesty would, they felt, put an end to the anomalous position in which they had so long been placed, the Warrants they held from the Board not being recognized as giving them the same status as a Commission from the King. The Duke of Cumberland viewed their request favourably, and being much impressed with its justice, used his influence to obtain what they sought.

On the other hand the Board took an opposite view, and interposed every difficulty they could invent. Doubtless they were very much displeased that the officers of the Corps had passed them by and taken their grievances direct to H.R.H. the Captain-General of the Forces. They further feared that they would lose much of their hold upon the Engineers if these officers held army commissions, as in that case it seemed probable that their movements and discipline would fall under army jurisdiction. The difficulties raised by the Master-General and Board were such that it took seven years before the Duke and the other friends of the Corps were able to carry their point.

At this time they had a private agent in the War Office called Boddington, whose correspondence gives many interesting details of what may be termed Corps gossip. His position as agent does not seem to have had any official sanction, as he was at the time simply a clerk in the Ordnance Office; but he doubtless made a satisfactory addition to his modest salary by his friendly services to the Engineers. He says in a letter to Montresor, at Gibraltar, dated July 2nd, 1749 :—

"It has always given me satisfaction to have my agency affairs confined pretty much to the Engineering branch, as my situation happens to be in that part of the office where business falls pretty heavy."

His correspondence has been guarded in the records of the Board. A few specimens may be culled, showing how useful a friend he was to his clients. In January, 1750, he wrote to Brewse :—

"I am glad you are under so agreeable a commander as Colonel Corn-

wallis. The Board have promised to provide for you in Nova Scotia, when an establishment is settled. I recommend you to press for more pay; it will put them in mind of you. Tell them that as they had appointed an Engineer at 20s/ per day, who never appeared" (this was John Armstrong), "and you have done the duty, you hope they will think you deserve that allowance. Your project for fortifying Halifax has come safe. I hope you have had no more trouble with Cowley."

The last remark refers to an unpleasantness which had arisen between Brewse and Cowley, the latter having claimed the right to interfere owing to his superior rank, although he did not hold any Warrant for Nova Scotia. Brewse had held his own, and compelled Cowley to retire from the scene.

We come across another friendly hint, this time addressed to Hardesty :—

"You had better send up your bill at once for going to Scotland, than keep it till winter and make up one for the whole year. My reason is founded on the general aversion I see to those bills which come from different quarters. However, two small ones may go down where one large one will not. Make what use you can of this, but take no notice whence it came."

Later on, he writes again to Brewse at Nova Scotia :—

"Your father is anxious to have you placed on the Home Establishment. Mr. Armstrong does not come your way." (He was retained in New York.) . . . "Whenever you go to Placentia you will find a very agreeable second is appointed to assist you,—Dawson. He bears an excellent character, and I can't help recommending him to your favour. The Engineer for St. John's, I fear, is not so happy in a second." (This was Hylton.) "Mr. Bastide is gone to settle everybody in their new stations in Newfoundland. He has 20s/ a day as Director, 20s/ as Chief at Annapolis, and 10s/ in lieu of a clerk. He is next to visit Annapolis and your friend Cowley, who, if I guess right, is too proud to be a favourite of his."

On June 2nd, 1750, he writes :—

"The Pondicherry Engineers are all in London; those from the American Colonies are recalled. Mr. Campbell died soon after his return. Mr. Brewse is at Nova Scotia; no other Engineer. The settlement goes on extremely well, by all accounts I hear, but at present we have no establishment for that place, so that Mr. Brewse is only lent them. The Corps of Engineers have petitioned H.R.H. the Duke of Cumberland to be allowed rank in the Army, and have hopes of succeeding. We have no Chief Engineer in the room of Lascelles."

In 1754 war broke out once more between England and France in their North American colonies. The question at issue was a disputed boundary, the French being very desirous to restrain the British from approaching the Canadian lakes. There had been

some desultory fighting on the part of the provincial troops, but the King now decided upon sending an expedition from England, to be under the command of General Braddock.

On November 24th, 1754, a Royal Warrant was issued for the Engineers to accompany the force. These were to be Sub-Director James Montresor, as Chief Engineer; and under him Engineer in Ordinary, Patrick Mackellar; Sub-Engineer, Harry Gordon; and Practitioner Engineers, Adam Williamson and Thomas Sowers. On the arrival of the troops in America separate columns were formed for the attack of different points. One was directed against Fort Beau Sejour, in Nova Scotia, under Colonel Monckton; John Brewse, the local Engineer, was with this force, and under him Ensign Winkworth Tongue, of Warburton's regiment, acted as Sub-Engineer, although not on the establishment. This officer was wounded during the operations. After five days of open trenches the fort was captured, and its name changed to Fort Cumberland. This easy victory secured Nova Scotia to the British Government. Lieutenant-Governor Lawrence wrote on the occasion—

"I have reason to believe our succeeding so soon and with so little loss is owing to the good conduct of Mr. Brewse, who acted there as Chief Engineer."—("Lond. Gaz.," 9,497, July 26-29, 1755.)

Braddock, with the main portion of the force, proposed to advance from Virginia across the Alleghany Mountains to the attack of Fort Du Quesne, at the junction of the Ohio with the Monongabela. He started from Alexandria on May 30th, sending in advance a detachment of 600 men, with whom was Montresor, the Chief Engineer, to direct and assist in forming a road for the main body. This pioneer force was employed in widening and levelling the forest paths, and throwing bridges across the streams encountered on the way. The labour was very severe and the progress necessarily slow. It was not till July 8th that the column reached a point within ten miles of Fort Du Quesne. On the following day, whilst continuing their march through the woods, they were surprised by the French and their Indian allies, and cut to pieces. Braddock was killed, and of the five Engineers present four were wounded, viz., Montresor, Mackellar, Gordon, and Williamson.

Another column was placed under the command of Major-General Johnson, with the intention of capturing the French fort at Crown Point, which, it was asserted by the British, had been built within their territory. This party started from Albany on August 3th, having a long and difficult march before them. Johnson had applied for an Engineer to be attached to his force "as of great necessity." Captain William Eyre, an Engineer Extraordinary on the establishment, was named for the duty, and

performed his share of the work much to the satisfaction of his commanding officer. From the camp at Great Carrying Point to Lake St. Sacrament (afterwards called by General Johnson Lake George), Eyre constructed a road for the passage of the troops. When at the latter point, Johnson heard that the French under Baron Dieskau were approaching, and he determined to receive them where he stood. Eyre at once improved the position, already naturally very strong, by felling a number of trees, and in front of a breastwork constructing an abattis at all points not covered by lake or swamp. In the salients he planted his field-pieces, as well as some heavier ordnance which had accompanied the march.

The battle was fought on September 8th, 1755, and lasted for four and a-half hours. Eyre had command of the Artillery as well as of the Engineer operations, and his handling of that arm was so effective that he received the special praise of the General, who in his dispatch of September 9th stated that he had discharged the duty "in a manner very advantageous to his character." The result was a complete victory for the British, Baron Dieskau being wounded and taken prisoner. It formed a satisfactory set-off to Braddock's disaster, and was consequently hailed with general enthusiasm. Johnson was made a baronet, and Eyre received a Majority.

There had been no authorized increase of the Corps since its establishment on August 22nd, 1717, and year by year the difficulty of carrying on the service with such limited means had become more apparent. Sir John Ligonier, who was at this time Lieutenant-General of the Ordnance, now took the matter in hand, and pressed personally on the King the necessity for an increase. The result of his interposition was that on December 16th, 1755, a Royal Warrant was issued giving an augmentation of eight Practitioners to the Corps. The men who under this Warrant were received into the establishment were William Spry, William Dundas, Robert George Bruce, Augustus Durnford, David Dundas, Thomas Bassett, William Roy, and Charles Tarrant. With this addition the strength of the Corps appeared as under:—

On the Home Establishment	37
Minorca	2
Gibraltar	2
Newfoundland	4
Nova Scotia	3
Virginia	5
West Coast of Africa	3
Total	56

The real numbers were, however, only forty-nine, as seven of the officers are counted both on the home establishment and in the colonial lists. It may not be without interest to give their names and stations.

The post of Chief Engineer was, as already recorded, vacant. The others were filled as under:—

At Home.

Director . .	William Skinner	Ireland.
Sub-Director .	Dougal Campbell	Medway.
Engineer Extraordinary	George Weston	
Sub-Engineer	Hugh Debbieg	
Engineer in Ordinary	Leonard Smelt	Plymouth.
Practitioner. .	George Garth.	
Engineer in Ordinary	David Watson (Survey) . .	Scotland.
Engineer Extraordinary	John Hardesty	
Sub-Engineer	John Baugh	
Practitioner. .	Thomas Walker	
Engineer in Ordinary	Charles Rivers	Cinque Ports.
Engineer Extraordinary	George Morrison	With Prince of Wales.
Sub-Engineer	John Manson	Channel Islands.
Practitioner. .	Charles H. Herriot	Portsmouth.
,,	Thomas Wilkinson	
Engineer in Ordinary	Geo. Aug. Eliott	With their Regiments.
	. . . .	
Sub-Engineer	Robert Clerk	
Engineer in Ordinary	John Armstrong	Invalided.
Sub-Engineer	Richard Dudgeon	Unemployed.
Practitioner. .	John Williams	Not stated.

Abroad.

Engineer in Ordinary	Arch. Patoun	Gibraltar.
Practitioner. .	Matthew Clerk	
,,	John Phipps	

Director	John Henry Bastide	Minorca.
Engineer in Ordinary	William Cunningham	
Engineer Extraordinary	John Archer	
Director	Justly Watson	West Coast of Africa.
Engineer Extraordinary	James Bramham	
Practitioner	John Apperly	
Sub-Director	James Montresor	Virginia.
Engineer in Ordinary	Patrick Mackellar	
Engineer Extraordinary	William Eyre	
Sub-Engineer	Harry Gordon	
Practitioner	Adam Williamson	
,,	Thomas Sowers	
Engineer Extraordinary	William Green	Newfoundland.
Sub-Engineer	Richard Dawson	
Practitioner	Edward S. Hylton	
Engineer Extraordinary	Matthew Dixon	Nova Scotia.
Sub-Engineer	John Brewse	
,,	William Bontein	

It will be seen that in the above list three officers are shown as serving on the West Coast of Africa. They were the first Engineers ever sent into that part of the world. They had been directed, by resolution of the House of Commons passed on April 22nd, 1755, to inspect the fort at Anamaboe and the other British stations on the coast.

The two senior officers returned to England in the summer of 1756, but Apperly remained on the Coast for some years superintending the construction of new works at Anamaboe.

The year 1756 opened with a serious alarm in England of a French invasion. Hitherto the conflict between the two countries had been confined to America, but it was now evident that hostilities would soon break out nearer home. Under the circumstances Colonel David Watson and Practitioners Roy and Dundas were employed making military reconnaissances throughout such parts of the country as seemed most open to attack. This work was carried on for nearly two years, and the results are to be seen in the King's Library in the British Museum, in a series of coloured plans and sketches by the two Practitioners.

They include the coast from the island of Portland to the Bay of Southampton, by Dundas; coast of Sussex with part of the country adjoining, by Roy; coast of Kent from New Romney to North Foreland, by Roy; coast of Kent from Whitstable to North Foreland, by Roy; country from Salisbury to Winchester and Alton, with the road from Petersfield to Godalming, by Dundas; roads from Guildford to Godalming and from Alton to Bagshot, by Dundas.

As early as March 19th, 1756, the Board had fathomed the real object of the preparations which were being made at Toulon for the equipment of an expeditionary force. It was not the invasion of England that was contemplated, but an attack upon either Gibraltar or Minorca, the two valued possessions of Great Britain in the Mediterranean. They wrote to the Duke of Marlborough, the Master-General, that this was their opinion, and suggested that a force of Miners should be sent out to attend to their peculiar work in defending the fortifications (Letters Mast.-Gen., vol. xii. p. 151). This seems to have had no effect, nor were any special precautions taken. The position of the Engineers at this time at Minorca was somewhat peculiar. When Director Thomas Armstrong left the island on being invalided home, General Blakeney, who was Governor and Commander-in-Chief, appointed William Cunningham, the second officer, to take up the duties of Chief Engineer, pending approval from the Board. These gentlemen, however, were not prepared to accept his nomination, and appointed John Henry Bastide to fill the vacancy.

This was unquestionably a very ill-advised proceeding. Bastide, although he had always proved himself a good officer and a talented Engineer, was now growing old, and suffering from gout and other ailments incident to his time of life. He was, therefore, most unsuited for a post which was liable at any moment to require a man in the possession of his full physical powers. Cunningham was so disappointed at the loss of the promotion that he applied to the Governor for permission to leave the station. This was granted, and he with his wife and family proceeded to Nice, *en route* for home. Whilst there Cunningham heard of the threatened attack, and determined at once to return to his post. He invested a sum of £1,600, saved during his stay at Minorca, in the purchase of timber and other necessary Engineer stores, which he well knew would prove most valuable, and freighting a ship, he promptly set sail for the island, where he placed himself and his goods at the disposal of the Governor.

This act on the part of Cunningham met with general applause. Walpole thus wrote of it:—

"Captain Cunningham, who had been ill-used in our service, and

retired to Leghorn, said, 'They will want Engineers.' . . . No sooner did the thought occur to him than he sold all he had, bought provision and ammunition, and flung himself into St. Philip's."—(Walpole's "George II.," by Lord Holland, ii. 226.)

Smollett is very strong on the subject—

"It is with pleasure we seize the opportunity of recording an instance of gallantry and patriotism in a British officer, which would have done honour to the character of a Roman tribune. Captain Cunningham, an accomplished young gentleman, who acted as Engineer in second at Minorca, being preferred to a majority at home, and recalled to his regiment by an express order" (this was not the case) "had repaired with his family to Nice, in Italy, where he waited the opportunity of a ship bound for England, when he received certain intelligence that the French armament was destined for the place he had quitted. His lady, whom he tenderly loved, was just delivered, and two of his children were dangerously ill of the small-pox. He recollected that the Chief Engineer at Minorca was infirm, and indeed disabled by gout, and that many things were wanted for the defence of the fortress. His zeal for the honour and service of his country immediately triumphed over the calls of tenderness and of nature. He expended a considerable sum of money in purchasing timber for the platforms and other necessaries for the garrison, hired a ship for transporting them thither, and tearing himself from his wife and children, thus left among strangers in a foreign country, embarked again for Minorca, where he knew he should be in a particular manner exposed to all the dangers of a furious siege."—(Smollett's "Hist. of Eng.," iii. 496.)

On April 18th the French landed in great force at Ciudadella, twenty-five miles from Mahon. At this time General Blakeney, who was himself a very old man, but one who had seen much meritorious service, had the following Engineer staff to depend on:—John Henry Bastide in command, William Cunningham (voluntarily acting as second Engineer), and John Archer. There were also four Acting-Engineers—Lieutenant Bowen of Cornwallis's, Lieutenant Hewitt of the Royal Welsh Fusiliers, Lieutenant Armstrong of Effingham's, and Ensign Wicket of Rich's.

One of the greatest complaints afterwards made, and with some justice, was that the Governor and his Chief Engineer neglected to destroy those houses in the town which would afford cover to the besiegers. Something more in this line might and certainly should have been done than was attempted; but it ought not to have been left to the last moment to carry out such work. The houses should not have been permitted to stand when the works about St. Philip's were first thrown up, rendering, as they did, so many of the defences almost nugatory. It is difficult to decide to what extent this evil had been allowed to exist. Armstrong

who had been Chief Engineer, and who wrote a history of the island, says that in his time the houses which might have been of service to an enemy were pulled down, and a sufficient esplanade left between the village and the fortifications (Armstrong's "History of Minorca"). John Hargrave, who succeeded Armstrong, also cleared away a great deal; but still much that proved objectionable was apparently left. When Blakeney called upon Bastide to report what further clearances should be made, he only proposed the demolition of his own house and three mills.

There is a letter from W. Horneck (who was Chief Engineer of Minorca at the time), addressed to General Anstruther, the Governor, dated August 14th, 1738, which throws a little light upon the difficulties attending the demolition of the village near St. Philip's Castle. The following extracts bear on the point:—

"Whereas the sit. of the village or Carraval of St. Philip's Castle is so near our Fortif^ns that some of y^e Houses overlook the palisades, and the whole is built in such manner as to be vastly detrimental to Us, in case of Attack, some streets being made as direct lines for an Ene^ys Batt^y & y^e height of the neighbouring houses command part of the covertway . . . . . I take the liberty to represent to you the vast necessity of the demolition of those lines and that Carraval as soon as possible. The reason for supporting this village has been on a/c of Q^rs for the off^rs and the soldiers of the comp^y of the 2 Reg^ts generally destined for S^t Philip's. The Castle, w^ch is very small in its area, can only contain the Art^y people & 5 Co^s of foot, & the little fort of S^t Carlos, with much ado holds one more, so that there being no other shelter for y other 14 Co^s but y^e Houses in y^e Carraval (such as they are), those Q^rs have been kept up by necessity, and that necessity carries with it that by their vicinity to y^e works it may prove the loss of S^t Philip's by robbing y^e garrison of a fair field for making a proper defence."

Horneck then goes on to propose the erection of suitable barracks for officers and men—

"At such dist from the castle that they may be no shelter to the approaches ot an Enemy, for in y^e Castle & amongst y^e works there is no room for B^ks except n S^t Carlos, a place often proposed tho' I think never resolved."

He goes on to point out the ultimate economy of such barracks:—

"The repairing y^e miserable Houses the soldiers are in are a yearly exp^se to y^e Gov^t, & y^e repairs of y^e Off^rs Q^rs w^ch is & has been for many years done at their own exp^se is a hardship scarce ever laid upon any troops or Off^rs whatsoever, & for y^e subalterns in particular, it robs them of a great part of that little pay they have to subsist on. . . . But y^e erecting of B^ks w^d put an end to all this, the soldiers w^d be quartered healthily & well, the off^rs eased of their burden, & the Carraval demolish of itself without any grumblings, heart burnings or complainings on any side."

The barracks were never built, the village remained in the occupation of the troops, and the result of the parsimony of the Board of Ordnance was now to become apparent.

It is quite clear that when the enemy advanced they made great use of its streets for cover, enabling them to dispense with trenches, which would have been difficult to construct in the solid rock. St. Philip's was itself a very powerful fortress, and considered one of the strongest places in Europe after Gibraltar. The castle was protected by a series of outworks, and additionally strengthened by a vast network of mines, as well as subterranean chambers for the shelter of the garrison when not on duty. When the island first fell into the hands of the British the defences of St. Philip's consisted only of the castle.

This had been greatly developed by the designs of our Engineers, and the outworks were entirely the result of their efforts. Lewis Petit, Durand, Page, Horneck, the two Armstrongs, Hargrave, Herbert, Mackellar, Patoun, Cunningham, and Bastide, all added their quota. Had the garrison been equal to the extent of line to be defended, the place could have been held against a far larger force than had been landed on the island. As it was, it consisted of only 3,000 men. This number did not permit of the profitable occupation of all the works, and the Governor was compelled to withdraw from many points which it would have been most advantageous to occupy.

The enemy, having entered the town, were not long in throwing up their batteries, and opening a heavy fire on the works, which soon began to show the effects of the breaching to which they were subjected. In the Royal Artillery Library at Woolwich is a MS. journal of the siege, by one of the Artillery officers present. As is natural under such circumstances, the details given are principally—indeed, almost exclusively—referring to that branch of the defence. There are, however, here and there entries which give one a glimpse at the Engineering portion of the operations. Thus, under date May 7th, we read—"The masonry of our works gives way by the explosion of our own guns." This certainly looks as though the construction of the ramparts had not been very efficient. So also on the following day it is recorded—

"This day there was an order not to fire the same gun above once an hour, there being many bad guns and the embrasures slight."

"June 5th. Lieutenaut Armstrong" (an Acting Engineer) "much wounded on the top of the Castle from the new battery."

"June 15th. Lieutenant Armstrong died this morning of his wounds."

The Engineers did all in their power to remedy the deficiencies under which the garrison laboured, but it was very uphill work. The Governor, although a most gallant officer, was far past the

ordinary age of man, and the Chief Engineer, whilst considerably his junior, was also much too old for his post, and crippled with gout. With these difficulties to hamper them, and with a garrison too small for the enceinte, with crumbling ramparts, and guns so worn that they could not be fired more often than once in an hour, it is not to be wondered at that everything went badly.

The besiegers soon found out that their task was not likely to be a very difficult one, and they were encouraged in consequence to press forward promptly. Everything seemed to favour them. The British fleet, under Admiral Byng, had appeared off the place on May 18th, but did not communicate with the garrison. A partial encounter had taken place with the French squadron, by no means disadvantageously to the British; but Byng decided to abandon the idea of assisting St. Philip's, and retired to Gibraltar, leaving General Blakeney and his garrison to their fate.

This did not add to the cheerfulness of the defence; still, every effort was made to postpone the day of surrender.

"They remounted cannon, the carriages of which had been disabled, they repaired breaches, and laboured with surprising alacrity even when they were surrounded by the numerous batteries of the foe, when their embrasures and parapets were demolished, and they were exposed not only to the heavy artillery but to the light musketry from the windows and houses in the town."—(Cust.)

At length, on June 27th, the Duke de Richelieu ordered a general assault. This was carried out, with the result that the Queen's redoubt and the batteries of Anstruther and Argyle were captured. Lieutenant-Colonel Jeffreys, who commanded in the redoubt, was taken prisoner before he knew the French were in the work. Major Cunningham was the next senior officer present, and led a party of the garrison against the stormers. In his brave effort to recapture the post he was bayoneted in the right arm, and his hand shattered by a musket ball. Thus disabled, he was compelled to retire; and although further efforts were made to dislodge the enemy by firing several mines, it was of no avail, and they remained masters of these important outworks. General Blakeney, thus deprived of some of his most zealous officers, called a council of war, and a capitulation was agreed on, the garrison marching out with the honours of war, and being conveyed in French ships to Gibraltar.

A special clause was inserted in the Articles of Surrender that—

"Mr. Cunningham, the Engineer who acted as a volunteer during the siege, should have a passport and leave to go wherever his affairs required. This Marshal Richelieu readily granted."—(Beatson: App. No. 92, iii. 120.)

The King was so struck with this gallant officer's conduct, that

on his return to England he gave him a company in the Third Regiment of Guards, which carried with it the rank of Lieutenant-Colonel. He was apparently almost the only man who earned any distinction in this ill-starred affair. Admiral Byng was shot for cowardice. The Governor of Gibraltar was ignominiously recalled for not having sent on a regiment from that place to aid in the defence; and his Chief Engineer, Archibald Patoun, also fell into disgrace for having given his opinion in favour of the course adopted by General Fowke.

The outcry in England was very great, and the Ministry, who were themselves by no means free from blame, sought to avert the consequences of the public discontent by furnishing victims wherever they could lay hold on them.

On February 10th, 1756, a measure was submitted to the House of Commons for raising a foreign legion of four battalions, for service in North America. To this force Dutch Engineers were to be attached. Pitt spoke very strongly against the proposal:—

"I have heard that we want Dutch Engineers for our sieges. What sieges have the Dutch made? English officers have behaved everywhere with lustre; the Dutch nowhere."—("Walpole's Geo. II.," by Lord Holland, ii. 159.)

The sanction of Parliament was, however, obtained for the scheme, and the Engineers were appointed. They only held rank as such in North America, where they were subordinate to the British Engineers. The Board of Ordnance had no connection with them, as they were under the direct control of the Commander-in-Chief in America, through the Quartermaster-General, and their salaries, &c., were paid out of the contingencies of the army.

In the month of May, 1757, the officers of the Corps received military rank. It has been shown, that as early as 1750, the Duke of Cumberland interested himself to procure for them this boon. He had ever since that time been urgent in the matter, but met with the most obstinate resistance on the part of the Master-General and Board. Now, however, he was at last successful. This date must therefore be marked as the one on which the military status of the Corps was for the first time officially recognized. Curiously enough, no special Warrant can be traced giving effect to the decision. Each officer simply received a commission signed by the King, which gave him army rank. These commissions were all dated on May 14th, 1757. They were issued as under:—

William Skinner, Chief Engineer, with rank as Colonel of Foot.

John Henry Bastide and Justly Watson, Directors, with rank as Lieutenant-Colonels.

Dougal Campbell and James Montresor, Sub-Directors, with rank as Majors.

William Cunningham, Archibald Patoun, Leonard Smelt, John Armstrong, Patrick Mackellar, David Watson, Charles Rivers, and James Bramham, Engineers in Ordinary, with rank as Captains.

John Hardesty, William Eyres, George Morrison, William Green, Matthew Dixon, John Archer, George Weston, and Harry Gordon, Engineers Extraordinary, with rank as Captain-Lieutenants.

John Brewse, Hugh Debbieg, John Baugh, William Bontein, Robert Clerk, John Manson, Richard Dudgeon, Edmund Scott Hylton, Richard Dawson, Charles Hubert Herriot, and Thomas Walker, Sub-Engineers, with rank as Lieutenants.

Adam Williamson, Thomas Sowers, Thomas Wilkinson, John Williams, Matthew Clerk, George Garth, John Phipps, William Spry, William Dundas, Robert George Bruce, Augustus Durnford, David Dundas, Thomas Basset, William Roy, Charles Tarrant, and John Christian Eiser, Practitioner Engineers, with rank as Ensigns (Commission Book, No. 1279, pp. 245-250).

As this was the first occasion upon which commissions in the army were granted to the Corps, it may be well to quote that which was given to Colonel Skinner upon appointing him Chief Engineer. It runs as follows:—

"George R.

"George the Second, by the Grace of God, King of Great Britain, France, and Ireland, Defender of the Faith, &c. To our Trusty and Well beloved William Skinner, Esq^re Greeting. We reposing especial Trust and Confidence in your Loyalty, Courage, good Conduct and Ability, do by these presents constitute and appoint you to be Chief Engineer upon the Establishment of our Office of Ordnance, and to take your Rank as Colonel of Foot in our Army. You will therefore carefully and diligently discharge the Duty of Chief Engineer by doing and performing all manner of things thereunto belonging; likewise to observe and follow such Orders and Instructions as you shall from time to time receive from Us, Our Master-General of the Ordnance for the time being, the Lieutenant-General and Principal Officers of the same or any other your superior Officer, according to the Rules and Discipline of War, in pursuance of the Trust hereby repos'd in you. Given at Our Court at Kensington this Fourteenth day of May, 1757, in the Thirtieth year of our Reign.

"By His Majesty's Command,
"Marlborough.

"Entered with the
"Secretary at War,
"Tho^s. Tyrwhitt.

"Entered in the Office of Ordnance
"this 17th day of May, 1757.
"W. R. Earle, Cl. Ordn^ce.

"W^m. Skinner, Esq^re. Chief Engineer and Colonel.
"Ent^d. fo. 23."

It seemed at this time that almost every expedition fitted out to strike a blow on the Continent was doomed to failure, either from incapacity on the part of the leaders, or from some gross delay or neglect in the preparation. The expedition against Rochefort, which took place in 1757, was no exception to the rule. As, however, an Engineer officer was connected with it in a manner more prominent than usual, it may be well to give a brief sketch of the affair. Robert Clerk, in returning to England in 1754, had visited the western coast of France, *en route*. He himself says:—

"I had heard that Rochefort, though a place of the utmost importance, had been very much neglected. I went there and waited on the Governor in my regimentals."

It seems that Clerk travelled always in uniform, and found himself in consequence everywhere treated with the greatest civility.

"I told him that I was upon my way to England from Gibraltar, and that I came on purpose to see the place, the dock, and the men of war. He was very polite; I was shewed everything; went aboard the Ships of the Line new built, and an Engineer attended me in going round the place."

The result of this extraordinary complaisance was that Clerk took note of the numerous deficiencies of the place, which, in his opinion, rendered an attack by sudden assault a matter of no great difficulty. Although at the time Clerk was only a Sub-Engineer, he had evidently become known as a man of capacity. He is called "a worthy, intelligent, and skilful officer," by Entick, and in the political pamphlets which arose on the subject of Rochefort, he is described as an Engineer of distinguished merit. Sir John Ligonier, the Lieutenant-General of the Ordnance, listened attentively to his project for the capture and destruction of the place, and called on him for a report on the subject. This he drew up, and from it the foregoing extract is taken. The matter was referred to the Cabinet, and Clerk was examined closely by the Ministers as to the state in which he found the place.

The scheme looked so promising that an expedition was decided on. To Sir John Mordaunt was given the chief command, with Generals Conway and Cornwallis as Brigadiers. Clerk was appointed Chief Engineer, and the unprecedented step was taken of promoting him at a bound to the rank of Lieutenant-Colonel, he being at the time only a Lieutenant (Commission Book, No. 1279, p. 266). This is the sole instance on record of such rapid promotion having been given to any Engineer. Under him were Sub-Engineers Richard Dudgeon and Thomas Walker, and Prac-

titioners Robert G. Bruce, Augustus Durnford, William Roy, and John C. Eiser.

The equipment of the force was all that could be desired, and with moderate energy, and the smallest amount of dash, there is little doubt that the attack would have proved successful. Two names which were shortly to become famous in the annals of their country, were connected with this expedition—Howe and Wolfe; and they certainly were not the men to whom the failure was in any way due. The fleet, under the command of Sir Edward Hawke, which conveyed the troops, left Spithead on September 8th, and after some desultory cruising reached the Isle d'Oleron on the 20th. Three days later, Howe, in the *Magnanime*, pushed up the river Charente, and captured the Isle d'Aix. This was the only success achieved. For eight days indecision ruled in the councils of the chiefs. Rumours were prevalent that Rochefort had been strengthened, that a large force had been thrown into the place, that ramparts had been constructed at the parts which on Clerk's previous visits were open, and, worse than all, that the garrison had the power of letting water into the ditches.

It was at length decided not to run the risk of the attempt, and the fleet ignominiously returned home in the beginning of October. The commander, Sir John Mordaunt, was brought to trial for the failure, but acquitted. It was then said that Admiral Byng had been shot for doing too little, and Mordaunt acquitted for doing nothing at all. Wolfe wrote thus about the failure:—

"The whole affair turned upon the impracticability of escalading Rochefort, and the two evidences brought to prove that the ditch was wet (in opposition to the assertions of the Chief Engineer, who had been in the place), are persons to whom, in my mind, very little credit should be given. Without their evidence we should have landed, and must have marched to Rochefort; and it is my opinion that the place would have surrendered or been taken in forty-eight hours."—(Wolfe to Richson, Wright's "Life of Wolfe," p. 397.)

In the year 1758 three separate descents were made on the coast of France, two of which were sad failures, and the third, although successful in attaining its object, viz., the destruction of Cherbourg, did not achieve anything that could be considered equivalent to its importance. They may be dismissed very briefly in their order. The first was under the command of the Duke of Marlborough, and was destined for the capture and destruction of St. Malo. The Engineers attached to the force were Lieutenant-Colonel William Cunningham, as Chief Engineer, Captain George Morrison, Ensign Charles Tarrant, with Ensign Robert Morse as a volunteer for Engineer duties.

The troops were landed at Cancale on June 5th, and the

Engineers at once took measures to cover the place with strong lines. Little or nothing was accomplished by the troops. Some shipping was destroyed, as well as some magazines at St. Servan and Solidore; but the attack on St. Malo itself was considered impracticable. On the 11th the troops were re-embarked, and after some futile demonstrations at Cherbourg and Havre, returned home.

The same Engineers accompanied the second expedition, which was under the command of General Bligh, and was intended to act against Cherbourg. They reached their destination on August 6th, and landed without resistance. The few French that were in the forts retired without firing a shot, and the Engineers were at once set to work to carry out the necessary demolitions. The forts, docks, &c., were all destroyed; guns and shot thrown into the sea, with the exception of the brass ordnance, which was carried away; the troops re-embarked, and set sail for home on August 18th.

Encouraged by this success, the same forces were again embarked at the end of the month, to make a second attempt against St. Malo. Robert Clerk, who had ceased his connection with the Corps, was present on the general staff, as also was George A. Eliott, now a Brigadier-General.

General Bligh landed his troops in the bay of St. Lunaire on September 4th, and remained on shore for a week, doing, however, but little damage, and utterly unable to carry out his design against St. Malo. On the 11th they made a hasty retreat to their ships. The embarkation was not effected without an attack from the French force that had been collected in the vicinity. The loss of officers and men in the rear guard was very heavy, no less than 700 having been killed, drowned, or made prisoners. This disaster naturally led to much recrimination at home, and Robert Clerk was hotly attacked for his share in the business.

Efforts were made this year (1758) to carry on the war in North America with more vigour and success. The army there at this time amounted to 22,000 regular troops, with an even greater number of colonial levies. The whole was under the command of Major-General Abercrombie. Three separate expeditions were decided on. The first and most important was the reduction of Louisburg, which, having been restored to the French by the treaty of Aix la Chapelle, was now once more to be attacked. Major-General Amherst was placed in command of about 12,000 men for this service. Under him was Brigadier Wolfe. The Engineers were Colonel J. H. Bastide, as Chief; Major Patrick Mackellar; Captain Matthew Dixon; Captain-Lieutenants John Brewse, Hugh Debbieg, William Bontein, Richard Dudgeon; Lieutenants George Garth, William Spry, and Ensign Augustus Durnford.

The expedition sailed from Halifax on May 28th, and landed at Cape Breton on June 8th. The disembarkation was not effected without great resistance on the part of the defenders, but Wolfe's gallantry and dash enabled the operation to be successfully accomplished. He seized Lighthouse Point on the 12th, and the same night Major Mackellar broke ground against the fortress. The General was careful to secure his camp with intrenchments, as he feared an attack in his rear from the Canadians in the interior of the island.

The entrance to the harbour had been blocked by sinking three frigates across its mouth. The rest of the fleet, consisting of five ships of the line and two frigates, were anchored in a position from which they could annoy the besiegers with their fire. In spite of all obstacles the Engineers persevered with the construction of their batteries and trenches. Several sorties were made against them, but invariably repelled. In one of these, on July 9th, Captain Bontein was taken prisoner. On the previous day, Colonel Bastide had been wounded in the leg with a musket shot, and from that time the conduct of the siege was entrusted to Mackellar. On July 20th his batteries set fire to three of the largest of the enemy's ships, and shortly afterwards the Admiral captured the other two; the frigates, however, made good their escape in the night. The batteries were now turned with full effect on the fort, and the approaches driven nearer and nearer, until, on July 27th, the garrison surrendered without waiting for an assault. The British loss in this dashing affair was 523 killed and wounded.

The capture of Louisburg involved the loss to the French of the whole island of Cape Breton. The name of the fort was changed by the victors into Pittsburg, in honour of the Prime Minister.

General Wolfe was very dissatisfied with the engineering operations at this siege, and in his letters to his uncle spoke bitterly on the subject :—

"The parapets in general are too thin, and the banquettes every where too narrow. The trench of the parallel should be wide, and the parapets more sloping."

"Our next operations were exceedingly slow and injudicious, owing partly to the difficulty of landing our stores and artillery, and partly to the ignorance and inexperience of the Engineers."

"It is impossible to conceive how poorly the engineering business was carried on here. This place could not possibly have held out ten days had it been attacked with common sense."—(Wright's "Life of Wolfe.")

It is right to quote these condemnatory remarks, but it is probable that Wolfe, who was of a very daring and impetuous character, chafed under the delays of siege operations, and was

disposed to blame the Engineers for adhering to the ordinary rules under which they are conducted. Undoubtedly Bastide was too old and infirm to have the charge of so important a work, and in speaking as he did, possibly Wolfe was really blaming him.

Meanwhile, the main division of the army, under General Abercrombie, embarked on Lake George on July 5th, with the intention of capturing the French forts on that lake and on Lake Champlain. The Engineers with this force were Lieutenant-Colonel James Montresor, Chief Engineer; Captain William Green; Lieutenants Thomas Sowers, John Williams, Matthew Clerk, and Ensign John Montresor. The army landed at Sabbath Day Point, and a portion of it advanced on Ticonderoga. On arriving in the vicinity of that post, Matthew Clerk was sent with some staff officers to reconnoitre the defences. They reported in favour of an immediate assault. This was considered the more advisable, as news had reached the General that the enemy were expecting a reinforcement of 3,000 men.

Under these circumstances, the attack was determined on without waiting the arrival of the artillery. The troops pushed forward at noon on July 8th, and made a most gallant attempt to overcome all resistance. They found, however, that the defences were far stronger than had been imagined, and after a desperate conflict, which lasted four hours, were utterly beaten. Nearly 2,000 men were placed *hors de combat*, and the army was compelled to retire precipitately. No doubt Clerk and the staff officers were much to blame in having reported favourably upon the practicability of the attempt. He paid the penalty with his life, as he died in camp on July 18th, of wounds received during the storm. (Letter dated July 26th, "Gent. Mag." 1758, vol. xxviii. p. 498.)

He seems to have been the only Engineer present on the occasion, the others having all been with General Stanwix at Albany, or moving with the other columns.

As soon as the force had reached its camp, Abercrombie detached Colonel Bradstreet, with 3,000 men, to capture Fort Frontenac, at the point where the St. Lawrence joins Lake Ontario. Sowers was detailed for Engineer service. The object of the expedition was accomplished; the place fell into the hands of the British, and was destroyed with all its stores. Several ships were at the same time taken.

Encouraged by this success, Brigadier Forbes was sent from Philadelphia to seize upon Fort Du Quesne. Engineer Captain Walker, who had recently arrived in North America, accompanied this force. After a severe check at a place called Lyal-Henning, in which 19 officers and 300 men were lost, Forbes reached the fort, which he found abandoned. He at once garrisoned it with

provincial troops, and rejoined the army. The result of this campaign was greatly to weaken the French hold on her Canadian provinces.

On February 23rd, 1759, the Board of Ordnance addressed the following letter to the King :—

"May it please Your Majesty,—

"We, the Principal Officers of Your Majesty's Ordnance, humbly beg leave to represent that the Establishment of Engineers, Confirmed by Order in Council the 22nd day of August, 1717, being too small to answer the Services which have since arisen, other Establishments were made from time to time for the Foreign Garrisons, and the number of Practitioners at home have been increased, and some of the Engineers being Superannuated, have allowances granted them upon the Establishment. These several Additions and Alterations have in course of time caused such Confusion, that it is hardly Possible to Comply with any of the before mentioned Establishments, without distressing the Service in time of War, and the necessity of the times likewise requiring Forts to be erected and maintained in various Parts of Your Majesty's Dominions, at home and abroad, and Enterprizes of great importance to be undertaken in America, which had occasioned so many Demands for Engineers, that at this time, there are no more than five left in Great Britain, which are not sufficient for compleating the works carrying on here. It is therefore of the utmost Consequence to Provide Speedily for the increase and better Regulating of the Corps of Engineers. For which reasons We beg leave to lay before Your Majesty an Account of the Establishments as they now stand, shewing the present Charges thereof, as also a Scheme of an entire New Establishment, whereby all the Engineers will be formed into one Corps ; their pay will be made the same as other officers of like rank in the Army ; the number will be Increased from 49 to 61, and the Annual Charge will be no more than Eight Thousand Ninety Three Pounds Seventeen Shillings and Sixpence Provided the Superannuated Persons are not included therein. If the proposed Scheme for a New Establishment should meet with your Royal Approbation, We humbly Pray to Receive Your Majesty's Commands for discontinuing all the former Establishments of Engineers, also for carrying the New Establishment into immediate execution, and for Charging to Parliament the Pay of the Superannuated Engineers for the future, which we apprehend will greatly tend to the good of Your Majesty's Service, and will be a much Cheaper method of Increasing the Engineers to the number now necessary, than if an Augmentation should be made by adding the same number to the present Establishment.

"All which is humbly Submitted.

"S^d. Geo. Sackville, Charles Frederick,
W. A. Earle, A. Wilkinson, Charles Cocks."

"Office of Ordnance,
"23 February, 1759."

The accompanying papers showed the existing establishment to

consist of 50 Engineers, as under :—Home strength, 39 ; Gibraltar, 3; Annapolis, 3; St. John's, 2; Halifax, 1; Placentia, 2,—at a cost of £7,418 12s. 6d.

The proposed new Establishment was to consist of—

1 Chief Engineer	at	27s. 6d.
2 Directors	„	20s. 0d.
4 Sub-Directors	„	15s. 0d.
12 Engineers in Ordinary	„	10s. 0d.
12 „ Extraordinary	„	6s. 0d.
14 Sub-Engineers	„	4s. 8d.
16 Practitioners	„	3s. 8d.

This was approved by the King in Council, and the order directing it to be carried out bears date St. James's, March 3rd, 1759.

It will be seen by the above that the pay of the two junior grades was raised in each case by 8d. The breaking up of the foreign establishments entailed a loss of pay on most of the officers there employed, should the Privy Council Order be strictly adhered to. To meet this difficulty the following extra allowances were granted to those serving in the colonies :—Director and Sub-Director, 5s.; Engineer in Ordinary, 2s. 6d. ; Engineer Extraordinary, Sub-Engineer, and Practitioner, 2s.

When the necessary promotions, consequent on this order, had been carried out, the Corps stood as follows :—

Chief Engineer—Major-General William Skinner.

Directors and Lieutenant-Colonels, J. H. Bastide, James Montresor.

Sub-Directors and Majors, William Cunningham, Archibald Patoun, Patrick Mackellar, James Bramham.

Engineers in Ordinary and Captains, William Green, Matthew Dixon, William Eyre, George Morrison, John Archer, George Weston, Harry Gordon, John Brewse, Hugh Debbieg, John Baugh, Richard Dawson, Richard Dudgeon.

Engineers Extraordinary and Captain-Lieutenants, William Bontein, Charles H. Herriott, Thomas Walker, Adam Williamson, Thomas Sowers, Thomas Wilkinson, John Williams, George Garth, John Phipps, William Spry, William Dundas, Robert George Bruce.

Sub-Engineers and Lieutenants, Augustus Durnford, David Dundas, Thomas Basset, William Roy, Charles Tennant, John C. Eiser, Richard Muller, Theophilus Lefanue, Archibald Campbell, Patrick Ross, John Montresor, John Craskell, Henry Watson, Samuel Beardsley.

Practitioners and Ensigns, Robert Morse, Joseph Heath, Abra-

ham D'Aubant, Frederick G. Mulcaster, Elias Durnford, William Green, Alexander Mercer, Andrew Frazer, John Marr, Gilbert Townshend, Archibald Robertson, Daniel Slack, Abraham Walsh, and three vacancies.

Towards the end of 1758 an expeditionary force sailed for the West Indies, with the object of reducing the French islands in the Carribbean Sea. General Hobson was placed in command of the troops, which comprised six regiments. The Engineers appointed for the service were—Lieutenant-Colonel William Cunningham, as Chief Engineer; Captain-Lieutenant Thomas Wilkinson; Lieutenants Richard Muller, Theophilus Lefanue, Archibald Campbell, Patrick Ross, Thomas Craskell, and Ensign Robert Morse. The armament sailed from Barbados on January 13th, 1759, reaching Martinique on the following day. The troops were landed, and an attack begun upon the principal defensive post of the island; but from some unexplained cause, probably dissension between the naval and military branches, it was not prosecuted; the troops were re-embarked, and set sail for Guadaloupe. Here they arrived on January 22nd.

"Though the town of Bassterre, the metropolis of Guadaloupe, was very formidably fortified to the sea, and the fort was thought by the Chief Engineer, on his reconnoitring it, to be impregnable to the ships, on the 23rd Commodore Moore attacked the place."—("Lond. Gaz." March 7th, 1759.)

The result was favourable. After a severe action the French artillery was silenced, and the fleet came to anchor in the roadstead of Basseterre. The troops were landed, and took possession of the town and citadel, which had been abandoned by the enemy. The whole island was not reduced until after a protracted struggle; but eventually, on May 1st, a capitulation was agreed on, and the French evacuated the place. Lieutenant-Colonel Cunningham, who had acted as Deputy Quartermaster-General to the force, as well as Chief Engineer, on its landing, died at Guadaloupe shortly afterwards ("Gent. Mag.," xxix. p. 392).

During this year great efforts were made to drive the French out of Canada by simultaneous advances against them at different points. With this object it was proposed to attack Crown Point, Niagara, and the forts to the south of Lake Erie; whilst at the same time a large combined naval and military force was to enter the River St. Lawrence, and endeavour to seize Quebec. General Amherst was in chief command, and he, with an army of 12,000 men, pushed forward to Ticonderoga and Crown Point. Both of these places were abandoned by the enemy on his approach; but he was not able to carry his success

further, and wintered at the latter post. Lieutenant-Colonel Eyre was his Chief Engineer.

The main interest of the campaign centres round the force commanded by General Wolfe, which was to attempt the reduction of Quebec. Major Patrick Mackellar went as his Chief Engineer, and under him were Captains William Green, Hugh Debbieg, and A. Williamson. Major Mackellar wrote a short account of this expedition, which he illustrated by a plan. This has been published in the "Royal Engineer Corps Papers" of 1849. Curiously enough it has been wrongly attributed in that publication to a Major Moncrief. This shows how little the history of the Corps was known at that time. There was no Major Moncrief on the list, and the paper is initialed P. M., which evidently stands for Patrick Mackellar. The account which he wrote is exceedingly simple, and he does not in it refer to the work of the Engineers. Moreover, he seems not to have considered the scaling of the heights of Abraham a matter of much difficulty, and his description of that operation is meagre in the extreme.

He states that Louisburg was selected as the place of rendezvous, but as that harbour might not be clear of ice early enough, Halifax was also chosen, and that the first steps were taken at that point for organizing the force. Brigadier-General Murray was already at the station, and Brigadier-General Monckton arrived there on April 22nd, furnished with full instructions as to what was required. On April 30th Admiral Saunders brought the fleet from England, having on board Major-General Wolfe in chief command, Brigadier-General Townsend, Colonel Carleton, "and some other officers." It may be noted that throughout the paper Mackellar uses this phrase when he wishes to record his own presence. We may therefore conclude that he was with the staff. Wolfe approved of the steps taken at Halifax, and the forces were gradually embarked for the rendezvous at Louisburg. The entry of May 31st (evidently at Louisburg) runs :—

"Brigadier-Gen^{l} Monckton arrived with four battalions from Halifax and two battalions from the Bay of Fundy. Our whole force was now assembled, consisting of ten battalions, three companies of Grenadiers from the garrison of Louisburg, a detachment of artillery, and five companies of rangers, the whole amounting to 8,535 men fit for duty, officers included."

The fleet with the troops on board left Louisburg early in June, and arrived at the Isle of Orleans, opposite Quebec, on the 26th.

"In the evening the last division of our transports passed through the traverse at the lower end of the Isle of Orleans, which, though reckoned dangerous, our ships turned up with a contrary wind. This piece of

seamanship surprised the enemy a good deal, for we were perhaps the first that ever attempted to get through in that manner.

"June 27th.—In the morning the signal was made in the south channel of the Isle of Orleans for landing the troops; this was immediately set about, and met with no opposition, the island having been abandoned some time before."

It may here be said that the city of Quebec, which faces the Isle of Orleans, consists of an upper and lower town, the latter occupying the bank of the river, and being separated from the upper town by a steep and rugged line of rock, which runs right across the promontory on which the whole stands. In order to secure the place it would be essential to capture the upper port, which contains the citadel, and therein lay the great difficulty of the attack. The French, who were about 10,000 strong, under the command of the Marquis of Montcalm, were stretched along the north shore of the basin which separated the town from the Isle of Orleans, in a series of eight separate encampments, reaching from the River St. Charles to within a mile of the Falls of Montmorenci. The coast had also been fortified, and "there were some floating batteries, launches, and batteaux, with cannon in the creeks along shore."

Wolfe directed his Engineers to throw up batteries, both on the west point of the Isle of Orleans, and also at Point Lewis, the most northern part of the promontory, which is formed by the winding of the river St. Lawrence, opposite Quebec. These when completed played upon both the upper and lower town. The latter was soon reduced to ruins; but as regards the former, although much injury was done, no real progress seemed possible. Under these circumstances, Wolfe decided that as he could not induce the French to leave their intrenchments and attack him, he must take the initiative. He therefore determined to attempt the task of driving them from their encampment on the north of the basin. With this object he took possession of the ground on the east side of the Montmorenci Falls on July 8th, and gradually moved the main portion of his force there from the Isle of Orleans, which he left under the charge of a detachment. The French at once began to increase their defensive works opposite the points selected for the British camp. Matters remained thus quiescent for some time, the bombardment of the town being continued from the batteries already erected.

On July 31st Wolfe made his dash at the enemy's intrenchment at Montmorenci, and failed, owing to the impetuosity of a portion of the troops.

"The grenadiers and pickets landed very quickly, formed as fast as they could, but pushed forward rather too eagerly to the attack of

the westernmost redoubt and battery. They had gone but a very little way when the enemy began a close heavy fire with small arms from their intrenchments on the top of the bank, which had an entire command of the ground where the redoubts stood. They, however, got possession of it, but they were so much exposed to the enemy's fire, which continued very steady, that they were obliged to retreat." . . . "The two brigades from Montmorenci had by this time got within half a mile of us to a place appointed, where General Townshend halted and sent for orders. Everything was now ready for a second attack, but it was thought too late; the tide was coming in, and but little daylight remaining, the former of which circumstances must in about an hour cut off all possibility of a retreat by the ford, and the latter prevent our reaping any considerable advantage from a victory if we obtained one."

The retreat was therefore ordered, and the attempt abandoned. Captain Green and Captain A. Williamson were both wounded in this affair ("Lond. Gaz." Ext. Oct. 19th, 1759.). In the same "Gazette" is the following extract from Wolfe's despatch, which was dated September 2nd:—

"The admiral and I have examined the town with a view to a general assault; but after consulting with the Chief Engineer, who is well acquainted with the interior parts of it, and after viewing it with the utmost attention, we found that though the batteries of the lower town might be easily silenced by the men of war, yet the business of an assault would be but little advanced by that, since the few passages that lead from the lower to the upper town are carefully intrenched, and the upper batteries cannot be affected by the ships, which must receive considerable damage from them and from the mortars."

The failure on the Montmorenci intrenchments had so disheartened Wolfe that his health broke down, and throughout the month of August little was done. Early in September, however, he roused himself to a fresh effort, and this time determined to attempt a landing beneath the rugged heights that lined the river above the town. With this object he withdrew his troops from the Montmorenci camp, and prepared for the new venture. Mackellar and Debbieg both took part in it, the other two Engineers still suffering from their wounds. The attack is thus described by Mackellar:—

"Between two and three in the morning" (of September 13th) "our boats began to be in motion, dropping down with the tide in the order they were to land, and as silently as they could. Admiral Holmes hoisted his flag on board one of the frigates, and followed with the shipping in the same manner, the whole seemingly unobserved by the enemy. In our way down, a captain of light infantry in one of the headmost boats, discovered by accident from the *Hunter* sloop, that the enemy expected some boats that night down the river with provisions, and

availing himself of the discovery, passed several of the enemy's sentries as such" (in fact, he answered the challenges in French), "by which means the light infantry had actually landed without being once fired at. The battalions under Brigadier-Generals Monckton and Murray landed immediately after them, and then the enemy's picket took the alarm and began to fire. Three companies of light infantry were immediately ordered to get up the bank to the right of the pathway as they could, and to give a signal when they got up." . . . "The battalions were formed on the beach as they landed, and now began to get up the bank and form above. The light infantry was disposed of, some in the woods upon our left flank to cover that side, and others to scour the face of the bank towards the town." . . . "All the troops of the first landing being now got upon the top of the bank, the first step taken was the attack of a battery of four pieces of cannon, which the enemy had at a place called Samosse, about a mile and a-half above, near Sillery." . . . "The main body of the first landing was now marched up to the top of the height called the Hauteur d'Abraham, which forms a plain." . . . "They remained but a short time in this position" (*i.e.*, in line facing the St. Louis road), "when the general, from an eminence upon the right, discovered the enemy assembling upon the rising ground between him and the town, and observing their numbers increase, he altered the position of his line, and faced towards them." . . . "Both armies had now become pretty numerous; ours by our second landing, which by this time had joined us, and theirs by their troops from Beauport, which were coming up very fast."

Then follows a description of the formation of the British line, with names of the regiments and their commanders, and also of the French. The crisis soon arrived.

"The French line began moving up to the charge about nine o'clock, advancing briskly and for some little time in good order. Their front began to fire before they got within reach, and immediately followed throughout the whole in a wild, scattering manner. They then began to waver, but continued advancing with the same disorderly fire. When they were within 100 yards of us our line moved up regularly with a steady fire, and when within 20 or 30 yards of closing, gave a general one, upon which the enemy's whole line turned their backs from right to left in the same instant. They were by ten o'clock pursued within musket shot of their walls, and scarce looked behind till they had got within them." . . . "Our general was mortally wounded when the affair had almost come to a crisis, and lived only long enough to know that he should die victorious." . . . "Our loss upon the whole was 9 officers killed and 55 wounded, 49 non-commissioned officers and private men killed, and 542 wounded."

This victory sealed the fate of Quebec, although it held out for a few days. Ground was broken to open the attack upon the favourable site now in the occupation of the victors, and a redoubt begun about 400 yards from the enceinte, to cover a battery

which it was intended to construct against the bastion of St. Ursula. This was on September 16th, and on the following day the French capitulated.

Brigadier-General Murray was placed in command of the newly-acquired city as Governor, and Mackellar remained with him as Chief Engineer. The defences were found to be in a very ruined condition, and but little means were at hand to restore them. Meanwhile, the French having recovered from the blow, once more rallied and prepared to regain their lost possession by a new siege. In the month of April they advanced for this purpose with a force of 10,000 men. Murray determined not to await them behind his ramparts, but marching out in person with some light artillery, and the greater portion of his garrison, took up a position at Silleri, where he gave battle to the advancing enemy. He was, however, badly defeated and driven back into the town. In this action Major Mackellar was dangerously wounded.

The French after their victory commenced the siege of the town. We read in General Murray's despatch of May 25th, 1760 :—

"On the 28th April the enemy opened trenches against the town, and at the same time we set to work within to fortify it, which we never had in our power to attempt sooner from the severity of this climate, and the absolute necessity of executing works of more importance last autumn before the frost set in. I wanted the assistance of Major Mackellar, the Chief Engineer, dangerously wounded in the action. His zeal for and knowledge in the service is well known, but the alacrity of the garrison made up for any defect." ("Lond. Gaz." Ext., June 27th, 1760.)

The advance of the British fleet up the St. Lawrence, and their attack upon the French ships lying at anchor at the Foulon, caused the siege to be abandoned and Quebec to remain unmolested in the hands of the British.

One incident should be recorded connected with this second siege. It is thus related in Mante's History of the War :—

"It was likewise necessary that General Amherst should be made acquainted with the critical situation of the garrison. The consideration of the great fatigue, dangers, and difficulties with which the conveyance of such intelligence must be attended, prevented the Governor from exerting his authority to force the commission on any one. But his wishes were no sooner known than Lieut. Montresor, an Engineer, offered himself for the performance of this necessary duty, and having received the Governor's despatches the latter end of January, he in twenty-six days delivered them to General Amherst, after enduring in his journey every distress that cold, hunger, and so long a march could be attended with."

The capture of Quebec was before long followed by that of

Montreal, and thus the expulsion of the French from Canada was completely accomplished.

The British Government now determined to make a strong effort to expel them also from those islands in the West Indies which they still held, the most important of which was Martinique. A force was therefore assembled, under the command of General Monckton, who had distinguished himself at the capture of Quebec. The Chief Engineer with this force was Lieutenant-Colonel Mackellar, and under him were Captains Harry Gordon, A. Williamson, and J. Williams. The expedition having assembled at Barbados, appeared before Martinique on January 7th, 1762. The first attempt at landing failed, and it was not until the 16th that it disembarked at a point a few miles from Fort Royal. The capture of this work was effected on February 4th, after a troublesome siege, in which much loss was inflicted on the besiegers. This success was promptly followed by the surrender of the whole island, accompanied by that of the others which had still remained in possession of the French.

Having thus effected the object for which the expedition was formed, the Government determined to strike a severe blow against the Spaniards. With this view, the Earl of Albemarle was placed in command of a force to be despatched from England, Admiral Sir George Pocock being at the head of the fleet. Six Engineers accompanied the troops, viz., Captain Matthew Dixon, Lieutenants A. Durnford, Henry Watson, Archibald Robertson, Abraham Walsh, and Ensign Moncrieff. They sailed from Portsmouth on March 5th, and were joined by a large part of the troops lately engaged in the siege of Martinique, who met them off Hispaniola on May 27th. A third portion of the expedition was to be formed at New York, and was expected to join the main body at Havannah, the siege of which had been decided on; Lieutenant-Colonel Mackellar was appointed the Chief Engineer. In addition to the six officers above enumerated as having sailed from England, he had under his orders nine others from the American establishment. Amongst these were Captains Archer, Gordon, Williams, and Williamson; the names of the others are not recorded.

On June 7th the force landed, and after a sharp encounter with a large body of the enemy, advanced to the siege of a very strong fort called El Moro, which was one of the main defences at the entrance of the harbour. The siege was conducted under every possible difficulty. There was little or no earth in which to form the trenches, or to advance by sap; even water was only to be procured from a distance, and there was a total absence of roads by which to bring up the artillery. Tracks had to be cut through the

dense vegetation of a tropical forest to form communications, and the intense heat added to all the other obstacles to progress.

Lord Albemarle was, as already stated, in chief command, and under him was Lieutenant-General G. A. Eliott, the ex-Engineer, who advanced a corps a considerable way into the country to cover the siege operations. Don Luis de Velasco was the governor of the island, and he conducted his defence in the most gallant and energetic manner. The navy rendered great assistance to the besiegers, both on land and water, and on one occasion made a bold, though unsuccessful, attempt to crush the fort by a sea bombardment.

On June 18th the New York division arrived, bringing with it a welcome addition to the staff of Engineers, and on the following day the besiegers crowned the covert way before the salient of the bastion on which they were advancing. We read in Mante's account of the siege (during which he acted as Assistant Engineer), and which is included in his "History of the late War in North America and the West Indies"—"As to the ditch, the Chief Engineer was yet totally in the dark with regard to the state of it." Shortly afterwards, he records the dimensions taken after the covert way had been crowned, viz.:—

	Depth.	Breadth at bottom.	Breadth at top.
"Facing the sea bastion, it was ...	63½′	... 43′	... 56′
Facing the centre of the curtain ...	56½′	... 43′	... 105′
Facing the land bastion	45′	... 35	... 43½′"

This gigantic obstacle could only be overcome by mining—difficult as that operation was—and we read:—

"The English continued their subterranean labours much impeded by the obstruction of very large stones. However, by two in the morning, 22nd July, their miners had penetrated eighteen feet under the face of the bastion of the Moro that was opposite to their right. The sap, too, was in some degree formed before this face, and part of the curtain near the palisades, where the Engineers, fearing it should be taken in flank from the town, had directed it should turn off from the glacis." . . . . "Carleton, Brigadier of the day, disapproved this deviation from the glacis, on which alone there was sufficient earth to carry on the work. But even with this advantage, the work could not but prove both difficult and tedious." . . . . "Brigadier Carleton sent for Captain Dixon, the engineer of the night, and taking him along the palisades to the left, pointed out that spot to him as alone proper for that purpose, since there the sap might be carried on with ease and safety, and when made would command the entrance to the ditch and front attacked. The new plan being approved of by Captain Dixon, the workmen were ordered to conform to it."

Two of the batteries referred to in Mante's account were named after the Engineers who had constructed them.

"Dixon's battery and another about 200 yards behind it, called Williams's, were first exposed, being nearest the harbour, a party of about 30 men covered each."

At two p.m. on July 30th, the two mines that had been formed were fired. The one referred to above as running eighteen feet under the bastion was most effective. A large breach was made, which was at once stormed, and the fort fell into the hands of the besiegers after an attack of forty-four days. This was followed very shortly by the capitulation of the whole island, including the surrender of nine Spanish sail of the line which had taken refuge in the harbour. At this siege Captain Gordon and Ensign Moncrieff were both severely wounded.

Colonel Mackellar wrote an account of the operation, which was published in the "Royal Gazette," in September, 1762. On this point, Mante remarks—

"If we have not given as minute a detail of the operations of this important siege as that which was transmitted to the British Ministers, signed by the Chief Engineer, but which, we have the greatest reason to believe, the general never saw till he arrived in England, it is to avoid the confusion which everywhere occurs in that account."

Many years afterwards Durnford, then a colonel, wrote a letter in which he was seeking promotion, and in this he recapitulated his services. Here is what he said with reference to the capture of Havannah:—

"I afterwards embarked for the siege of the Havana, without a single recommendation to any General officer in the Army, trusting to my inclination and zeal for my King and Country's service as the surest and best path to their notice. On this Expedition I was Lieutenant of Engineers, and during that siege my conduct and activity so much attracted the notice of the Earl of Albemarle, Lord Heathfield, and other officers of the army, that the Com^r in Chief sent to me as soon as the place was taken, and in the most flattering manner offered me the appointment of Aide-de-camp, assuring me of further proofs of his esteem whenever it lay in his power, saying that he was happy to show to his army the good opinion he entertained of my conduct during the siege, and I was continued in that station until the Staff was landed in England."

The governor and others defending Havannah were punished for its loss on the report of a council of war. The Chief Engineer was declared unfit for any further military service in the armies of Spain, and was banished forty leagues from the Court for ten years, his property being confiscated for the use of the public ("Gent. Mag.," 1765, vol. xxxv.).

One more incident remains to be recorded which took place in the year before the capture of Martinique and Havannah, and that is the siege of Belleisle. This island, which lies off the coast of Brittany, and now forms part of the Department of Morbihan, was at that time, owing to its advantageous situation, much frequented by the French privateers which preyed on British commerce in the Channel. It was, therefore, considered advisable to undertake its capture so as to check this evil, and at the same time secure the benefits of the harbour for our own fleets.

The expedition numbered 10,000 men, and was under the command of General Hodgson, with Colonel Dèsaguliers as his Brigadier. The following Engineers were detailed for the service: Major Bramham as Chief Engineer (in the place of Lieutenant-Colonel Montresor, sick), Captains Archer and Wilkinson, Captain-Lieutenant Walker, Lieutenants Lefanu, Watson, Morse, and Heath, Ensigns Durnford, Green, Mercer, Townshend, Walsh, Tolby, and Ritso.

The force arrived before the island on April 7th, and attempted a disembarkation, which failed, causing a loss of 500 men. It was some time before the weather would permit a second effort; but at length, on April 21st, the operation was successfully carried out, and the enemy driven into the citadel of Palais, the only town on the island. This was a strong work, the design of Vauban, and required a regular siege for its reduction.

There exists in the Royal Artillery Library at Woolwich, a MS. journal, "by an officer who was present at the siege," from which the following extracts are interesting as bearing on the Engineer branch of the work:—

"May 5th. . . . In the evening the chief engineer closed the right of the trenches with a redoubt, which they began to work upon this night.

"May 6th. The chief engineer was ordered to advance a work before the Trenches, for a battery opposite the Bastion du Gouvernement and du Cavalier.

"May 7th. Brig. Genl. Desaguliers, with the chief engineer, went round the trenches this evening in order to pitch upon the most proper places for erecting batteries. . . . . Several of the fascines and pickets having been burnt as firewood, the Provost had orders given him to hang the first man or woman that he found burning or making use of such wood.

"May 9th. Whenever the chief engineer demanded any number of men of Burgoyne's regiment to carry fascines to the tail of the Trenches, they were to be granted immediately.

"May 11th. Enemy fired very smartly with small arms, by which we lost . . . an officer who acted as Assistant Engineer, who was

killed by a common shot as he was placing a mantlet on the right of the trenches.

"May 18th. The severe duty of the officers of artillery being much eased since the taking of the enemy's redoubts, four of them offered their services to act as Asst. Engineers, and were directly employed by order of the Commdr.-in-chief in erecting batteries on the left of the second parallel, and near the left French redoubt No. 4, under the direction of Brig. Genl. Desaguliers, upon a spot of ground which enfiladed that portion of the polygon against which the attacks were carried."

The four officers alluded to were Lieutenants E. Walker, D. Scott, J. Gowan, and R. Lawson. They served as Assistant Engineers from May 18th to June 30th, and received extra pay at the rate of 5s. a day.

"May 20th. There was so great a want of battery plank that the chief engineer was obliged to take up the platforms of the gun battery in the first parallel.

"June 5th. Engineers began to erect a new battery for one 8-in. howr. and a 24-pr. on a spot advanced about 230 yards before the sea mortar battery and directly over the hospital. To the right of it they also raised a smaller one for two 12-prs. Likewise began to raise a battery for 24-prs. on a spot advanced about 70 yards before the 10-gun battery and to the left of it. They also began to make a traverse across the harbour, in a line with the salient angle of the Redans, in order to cover the miners in their passage to the wall."

The miners here referred to were a company 70 strong, who were under the command of Captain-Lieutenant David Muckle, of the Artillery. This officer, who was wounded on May 13th, and again on June 2nd, died on June 18th.

The works had now been pushed well forward, and a practicable breach established, in consequence of which the garrison capitulated on June 7th, and the fort was taken possession of by the British, who held the island till the general peace of 1763 restored it to the French. The Chief Engineer of England, General Skinner, was sent to Belleisle to survey the works and give such instructions as he might think necessary for the restoration of the defences and the accommodation of the troops destined to hold the island. He spent a considerable time in arranging matters, and made many reports on the subject.

CHAPTER IX.

1763—1799.

Peace of Paris—Restoration of Minorca—Pensions for Widows of Engineers—Pay of Chief Engineer increased—Separation of Indian Engineers—Abolition of Engineer Grades—First General Brevet—The American Revolution—Battle of Bunker's Hill—Occupation of New York, Philadelphia, and Ticonderoga—Defence of Savannah—Capture of Charlestown—Surprise of Jersey—Second Siege of Minorca—Close of the War—Corps of Invalid Engineers—Establishment of Extra Pay—List of the Corps in 1784—Title of Royal Engineers granted in 1787—Successive Augmentations—War in the Low Countries—Siege of Valenciennes—Death of Moncrieff—Capture of French West Indian Islands and of Corsica—Expedition to Holland in 1799—Correspondence between Howe and Cornwallis—Death of Lieutenant-Colonel Hay—Close of the Campaign—Dress of the Royal Engineers.

As stated at the end of the last Chapter, the year 1763 was ushered in by a general pacification. The late war had greatly increased the possessions and prestige of England. She had expelled the French from Canada, the West Indies, and practically from India. Her own losses had been few, the only important one being that of the island of Minorca. By the Peace of Paris, which followed closely on the Treaty of Fontainebleau, England was to recover possession of that island, as well as Florida and Louisiana. She was also to retain all her conquests in North America and India. On the other hand, she was to restore Havannah, Belleisle, and the French West Indian Islands of Martinique, Guadaloupe, and St. Lucia to their former owners.

It became, therefore, necessary again to form an establishment for Minorca, and Lieutenant-Colonel Patrick Mackellar was nominated its Chief Engineer. He at once proceeded to his new post, and on June 4th, 1763, wrote a report to the Principal Officers of Ordnance, dated at Mahon, in which he says:—

"The French troops are this day embarked, and we are in possession of all the usual garrisons and civil government of the island. This business has been conducted with great unanimity on both sides, and the inhabitants are very happy in the change. With regard to the fortifications, I must observe upon the whole they are in much better condition than c^d be expected, w^ch we owe to their repeated expectations of our paying them a visit. I have likewise gone thro' the magazines and storehouses, w^ch are kept very clean, and what few stores are left are in

excellent order. I see no timber plank or boards, and very few tools. I miss a great variety of stores w^ch^ must have been there when they got the place; but as there was no inventory taken, I have no room to dispute but to take what I find."

Colonel Mackellar remained at Minorca until his death, which occurred on October 22nd, 1778. By an entry in the "Gentleman's Magazine" announcing that event, it is stated that he had been severely wounded at the siege of Havannah, and that he had a ball in his body received on that occasion which could never be extracted. This is probably a mistake. He was dangerously wounded at the battle of Silleri, but there is no trace of his having been further wounded at the Havannah. The bullet referred to doubtless dates back to the former battle.

During the next ten years England enjoyed a respite from war, and the records of the Engineers are consequently but few and unimportant.

In the year 1769 the King, in granting a pension of £30 to the widow of "the late Peter Henry Bruce, Esquire, who served as Chief Engineer in the Bahama Islands, and upon several other services," took the opportunity to extend the boon to the widows of Engineers generally:—

"And at the same time his Majesty was pleased to declare His Royal Intention that the Widows of the Engineers should be paid by the Office of Ordnance, for the future, the same Pensions as are allowed to the Widows of officers in other Corps, upon application being made to the Master-General or Principal Officer of the Ordnance for the same."

The Warrant granting this boon is dated August 29th, 1769.

In the year 1770 the King, by another Warrant dated June 28th, increased the pay of the Chief Engineer from 27s. 6d. to 44s. per diem, to place him on the same footing as Colonels-Commandant of the Royal Artillery. Formerly the pay of these latter officers had been only 25s.; but in 1763 it was raised to 44s., and Lieutenant-General Skinner fully expected to receive the same augmentation. He waited patiently for some years, but finding that no notice was taken of the inequality, he at length memorialized His Majesty on the subject. The King saw the justice of the appeal, and issued the necessary Warrant.

The next change occurred on April 1st, 1771, when it was decided that Engineers serving in India should no longer remain in the Corps. Five officers were in consequence removed from the list—Engineers-Extraordinary and Captain-Lieutenants A. Campbell, P. Ross, and H. Watson; Sub-Engineer and Lieutenant Lillyman, and Practitioner-Engineer and Ensign Wittever.

In 1773 another King's Warrant, dated on August 18th, gave

authority for all captain-lieutenants of the Corps to rank as captains in the army from May 25th, 1772. The captain-lieutenants then serving received captains' commissions bearing that date, and from thenceforth the commission of captain-lieutenant carried with it that of captain in the army.

In 1776 an augmentation of eight Practitioner-Engineers took place, raising the strength of the Corps to sixty-nine, and this was succeeded in 1780 by a further addition of six Practitioners, raising it to seventy-five. These rapid increases had been caused by the necessities of the American Revolution, owing to which a great demand for Engineers was created. So large a number of Practitioners disturbed the proportions of the several ranks which had been settled in 1759, and it soon became evident that some reorganization was necessary. On January 1st, 1782, the Duke of Richmond became Master-General, and he very promptly undertook to remedy the evil.

In a letter to the King he drew attention to the anomaly, and submitted "a new plan of establishment for giving that encouragement to which so meritorious a corps is justly entitled." The King approved of his scheme, and on November 18th, 1782, issued a Warrant to carry it into effect. This Warrant is interesting, from the fact that by it the Engineer grades, which had of late years been coupled with their military rank, were abolished, with the exception of that of Chief Engineer, and from this time army titles alone were adopted. The new establishment was to be as follows:—

1 Chief Engineer and Colonel	..	at 44s. per day.
6 Colonels Commandant	.. ..	„ 17s. „
6 Lieutenant-Colonels	..	„ 15s. „
18 Captains { Nine	.. ..	„ 10s. „
18 Captains { Nine Capt.-Lieutenants		„ 6s. „
22 First Lieutenants	.. ..	„ 4s. 8d. „
22 Second Lieutenants	.. ..	„ 4s. „
75 Total.		

It will be seen by this list that the rank of major was abolished. This was stated to be because no troops belonged to the Corps requiring officers of that rank. At the same time the large number of field officers of the higher grades was justified by the many important commands which they were called on to fill.

In the year 1777 occurred the first general brevet in the Corps. It was dated on September 10th, and the following officers gained a step in consequence:—Lieutenant-Colonels P. Mackellar, W. Bramham, W. Green, and W. Roy to be Colonels, and Majors M.

Dixon, J. Archer, H. Gordon, J. Brewse, H. Debbieg, and R. Dawson to be Lieutenant-Colonels.

Whilst these changes were taking place, the war of the American Revolution had been running its course. The discontent of the colonies had begun to show itself as early as 1773, when the celebrated destruction of the tea in Boston harbour took place; but the first overt act of war was not until 1775, the battle of Bunker's Hill having been fought on June 17th. Captain Montresor and Lieutenant Page were present at the action, and the latter was severely wounded. Three years later, Montresor, who was then at Philadelphia, but under orders to return home, wrote to Page a long gossipy letter, in which he makes the following reference to Bunker's Hill:—

"No opportunity offering until now, and my letter laying open, I must again date it, and of all the dates in the year, the 17th June of disagreeable memory, but I hope you are able to saunter without a stick."

This is a reference to Montresor's wound. It can be gathered from the context that he had been trying "Les Eaux de St. Amande," without any beneficial effect. The letter is written in a very desponding tone as to the prospects in America from a loyalist point of view.

"The measures have been uniformly so erroneous as to completely ruin it, and would have in a short time considerably affected the Mother Country. The Commissioners are arrived and begin to treat, so that I should suppose this Campaign will be employed in mere negotiation. We are, it seems, to evacuate this city, which I should think too great a present to make to the Rebels as a preparation. In short, the whole has been a Comedy of Errors, or all in the wrong, and now comes on the Farce."

Then in the subsequent part of his letter, dated as above quoted, on June 17th, he adds:—

"This evening the Troops are to abandon this City; we shall man the Works I have Constructed which form the Lines of Defence, and remain in them until Day light to-morrow, then cross the Delaware and join the Gros of the Army in N. Jersey, and march to New York."

Then there is the following postscript:—

"We've made an Alert from Rhode Island, which has been attended with Success. The Commissioners return this Day on board the *Trident*: they have, I understand, received their Answer from their high Mightinesses the Congress—I have heard—but how true it is 'that their offers are too late,' Altho' they offer all they wish and much more.

"Alas poor Great Britain
"How art thou, &c., &c., &c."

"Our Matters in this Country are too bad to Relate just now, so shall Bottle up until I see you."

In 1790, Lieutenant-Colonel John Small wrote thus to Page, then Sir Thomas Page:—

"The interesting position we were placed in side by side at the memorable Battle of Bunker's Hill will never be forgotten, and will ever excite the most anxious emotions in the breast of the fellow campaigner who has now the honor of addressing you; who witnessed in the most *trying* moments, your *innate* worth, your *professional* Intrepidity and skill, and was most seriously affected when at your side he saw you ffall from a very dangerous wound, receiv'd when displaying your exertions in the ffield, when your *cool and manly* example, and sound judicious advice, contributed much to acquire success and victory."

The writer had been Major of Brigade to General Pigot at the battle of Bunker's Hill.

Boston having been evacuated by the British, the force retired to Halifax in March, 1776. General Howe remained there for a couple of months, awaiting reinforcements from England, which were to be brought by his brother, Admiral Lord Howe. As they had not arrived at the beginning of June, he determined to take action without further waiting, and started for New York with the troops he had with him. Here several actions were fought, which terminated in the driving of General Washington and his forces from New York, and its occupation by the British. Captain Montresor, Lieutenant Kesterman, and Lieutenant Fyers took part in the battles at Long Island, York Island, and Brooklyn, the former acting as Chief Engineer. Owing to his position Montresor was afterwards examined by a committee of the House of Commons, appointed to inquire into the conduct of the American War, especially with respect to this portion of it, and in answer to questions replied:—

"That the lines on Long Island were so very strong that the morning they were evacuated it was with great difficulty that he and a corporal's patrole of six men could get into them to view them. . . . The works could not be taken by assault or storm; they called for regular approaches. It would be a forlorn hope to commit naked men to storm redoubts without fascines, scaling ladders, &c." . . . "The lines were evacuated on the night of the 28th (Augt, 1776), and he discovered it at four o'clock the next morning, with the patrole already mentioned."—("Hist. of War in America, 1780." App., p. 40.)

At the battle of Brandywine, which took place on September 11th, 1776, and which led to the occupation of Philadelphia by Sir W. Howe, Captain Moncrieff was present and served as guide to the 4th Regiment in crossing a ford of the river (Beatson, iv. p. 256). The same authority also shows that Lieutenant Twiss

was Chief Engineer with the force that General Burgoyne was bringing down from Canada to form a junction with Howe, by way of the Lakes. At Ticonderoga he was ordered to reconnoitre the fort, and he reported that it was completely commanded by Sugar Hill, that the ground there might be levelled so as to receive cannon, and that a sufficiently good road might be established within twenty-four hours. Burgoyne determined to act on Twiss's advice, and ordered a battery to be thrown up. The Engineer pushed the work with such energy that in the course of the next day the battery was ready to open fire. The enemy, perceiving this, abandoned the fort, which was at once occupied by the British.

Twiss shortly afterwards was one of the force, under Burgoyne, which surrendered to General Gates, and eventually embarked for England under the engagement entered into by the whole of the army, not to serve again in America during the war.

The only incident of the war in the year 1778, in which the Engineers were involved, was the surprise and capture of Dominica by the French, on September 7th, who threw a strong force on the island that morning. The garrison, which was a very small one, prepared for resistance, and Captain Gother Mann, the Engineer, was named to command a detachment of the Militia stationed at the new battery at Guey's Hill (now called King's Hill), which he prepared to defend. The Council of the island brought pressure to bear on Lieutenant-Governor Stuart to induce him to capitulate; he yielded, and the island was surrendered without an effort being made to retain it.

In 1779 the principal Engineer achievement was the gallant defence of Savannah, in which Captain Moncrieff earned great commendation. The combined French naval and American land forces (the former commanded by Admiral D'Estaing and the latter by General Lincoln) appeared on the coast, and the British were summoned to surrender. It was determined to hold the town, and Captain Moncrieff, the Chief Engineer, set to work to develop its defences and to prepare for a vigorous resistance.

"The zeal and talents of Captain Moncrieff, the Chief Engineer, and the unremitting exertions and labour of the officers and soldiers, assisted by the negro population, completed a line of intrenchments, with intervening redoubts which covered the troops, and placed the town in a tolerable state of defence. This important object was completed in less time than the enemy required for their preparatory approaches. Such was the celerity with which the works were carried on and completed, that the French officers declared that the English Engineer made his batteries spring up like mushrooms."—(Stewart's "Sketches of the Highlanders of Scotland," ii. p. 129.).

"The forces opposed were very disproportionate in numbers, the assailants being reckoned at not less than 7,000 men, while the garrison, including sailors and every description of men, did not exceed 3,000. The town of Savannah had been greatly strengthened by Captain Moncrieff, an Engineer officer, who gained great honour by his skill, as well as by his energy and judgment. A hundred pieces of cannon in battery already supplied the place of the eight or ten that were the only effective pieces at the moment of D'Estaing's summons."—(Cust, "Wars of the 18th Century.")

The enemy opened their trenches about the middle of September, and by the 24th had pushed their sap to within 300 yards of the intrenchments. On that day a sortie was made, which created great havoc in the besiegers' works, but the advance was continued until the night of October 3rd, when a violent bombardment was opened on the town from both fleet and army. The artillery having produced no result, a general assault was delivered on October 9th. This was most energetically and successfully resisted, and the allies were forced to retire with a very heavy loss, Admiral D'Estaing being among the wounded. This failure so disheartened the besiegers that they abandoned the operations on the 18th.

"Thus ended the attack on Savannah, which, from the state of the place and the force of the enemy, promised a very different result; but the talents of the officers, the firmness of the troops, and the excellent, though hastily constructed, defences, thrown up under the direction of Captain Moncrieff, the Chief Engineer, supplied the deficiency of numbers and strength of walls."—(Stewart's "Sketches," ii. p. 131.)

Moncrieff added to his renown by the manner in which he conducted the siege of Charlestown in the following spring. He was on this occasion the Chief Engineer to the force under Sir Henry Clinton. The trenches were opened in the middle of April, and by May 6th the third parallel had been completed, and a sap pushed forward to the ditch. This being a wet one would have proved a serious obstacle, but Moncrieff succeeded in draining off the water. His operations were carried on with such energy and success that on May 9th the place capitulated; 6,000 Americans, with seven generals and a commodore, became prisoners, and 400 pieces of artillery were captured. The French naval force lying in the harbour, with 1,000 seamen, also fell into the hands of the British.

Sir Henry Clinton, in his despatch of May 13th, 1780, to Lord George Germain, thus spoke of Moncrieff:—

"But to Major Moncrieff, the commanding Engineer, who planned and, with the assistance of such capable officers under him, conducted the

siege with so much judgment, intrepidity, and laborious attention, I wish to render a tribute of the highest applause and most permanent gratitude, persuaded that far more flattering commendations than I can bestow will not fail to crown such rare merit."

Colonel Elias Durnford, who was in command at Mobile, was obliged to surrender that place after a short siege by the Spaniards, under Don Bernard de Galvez.

There is nothing further of interest in the Engineer operations during the American War. At the surrender of Lord Cornwallis and his army at Yorktown, Lieutenant Haldane, of the Engineers, who was acting as one of his Aides-de-camp, and Lieutenant Sutherland, who was Chief Engineer at Gloucester, were made prisoners. As regards the latter, Cornwallis wrote on October 20th, 1781, "Lieutenant Sutherland, the commanding Engineer . . . . merited in every respect my highest approbation."

A very curious attempt was made at the beginning of this year to surprise the island of Jersey. A French force of 700 men, under the Baron de Rollecourt, landed on the island in the night of January 5th, and at daybreak of the following morning were found in possession of the town of St. Heliers. The Lieutenant-Governor, Major Corbet, was surprised in his bed and made prisoner. He seems to have behaved with great pusillanimity on the occasion, and by the orders he issued played completely into the hands of his captors.

Fortunately there were on the island officers under his command of a very different calibre. Major Pierson of the 95th, Captain Aylward of the Invalids, and Captain Mulcaster of the Engineers, distinguished themselves greatly in thwarting the designs of the French.

The story of Mulcaster's doings can be best told in his own words, in a report he addressed to Lord Amherst, dated the day after the occurrence :—

"My Lord,—I am sorry to inform your Lordship that this island was surprised, the Lieut.-Governor made prisoner in the capital of Jersey, in presence of the enemy before seven o'clock yesterday morning. Matters being thus circumstanced I threw myself into Elizabeth Castle, and being commanding officer, I ordered the necessary arrangements for its defence, which, with the assistance of Captain Crawford of the Invalids and other officers, was soon effected. About nine o'clock I was informed that a capitulation was on foot for the island and its dependencies; the garrison to march out with the honours of war, and their arms to be lodged in the Town House. I called a council of war, and before I had well laid before them the contents of the message I was informed the enemy were advancing in force. No time was to be lost for opinion. I took a decided one, spurned at the terms, and sent a

verbal message that I should defend the Castle to the last extremity.* The messenger was no sooner out of the gate than I ordered a shot to be fired wide of them, as a respect to the flag of truce, as I would consider the messenger in no other light; but the enemy still advancing, I ordered one to be directed at them, which, killing two men and taking off the leg of an officer, had the desired effect. They returned to town. At a quarter-past nine I sent to Capt. Lumsdaine, commanding the 78th Regiment, to send me some gunners from the Militia, and at the same time acquainted him of the determined resolution to defend the Castle. I was to hear in a short time that he had already made a similar reply to a like message, and he sent the gunners required. I sent a messenger to Major Pierson, now commanding-in-chief, of the step I had taken. About half an hour after ten o'clock Captain Aylward, of the Invalids, got into the Castle, and being the eldest officer I gave up the command, having acquainted him with the disposition I had made. A quarter before eleven o'clock a trumpet came in attended by a gentleman. He brought the French general's proclamation and the other articles of capitulation, and an order similar to that which I had first received to deliver up the castle. Neither the proclamation nor capitulation were read, but an answer sent of the same nature as before. These, my Lord, were the proceedings in Elizabeth Castle."

The letter goes on to describe at some length the steps taken by Major Pierson (95th Regiment), Captain Lumsdaine (commanding the 78th Regiment), and other officers to attack the French from different points, winding up with the conclusion of the attempt.

"The face of affairs being in a few hours thus changed, the enemy's vessels quitted the island, the troops they had landed being drowned, killed, wounded, or prisoners."

Unfortunately, Major Pierson fell mortally wounded by one of the last shots fired.

Lord Amherst made a suitable reply, in which he says—

"What fell immediately to your share in Elizabeth Castle while you commanded was perfectly well executed. As your letter was the clearest and fullest account I had seen I laid it before the King, and His Majesty received it graciously."

The French and Spaniards had by this time been for two years besieging Gibraltar, as is related in Chapter V., and they now

* According to the account given in the "Morning Chronicle" of Saturday, January 13th, 1781, the message was as follows: "Mr. D'Auvergne, the overseer of the works, went to the castle and told them he feared if they did not surrender, the French would hang the Governor and burn the town. Mulcaster answered, Let them begin to hang, burn, and be d——d to them, for he would not surrender the castle or the British flag so long as he had a man to defend it, to save anybody."

(1781) determined to make an attack on Minorca, the possession of which by the British rendered the effective blockade of Gibraltar a matter of much difficulty. The Duc de Crillon was appointed to command a combined French and Spanish force for the siege of Fort St. Philip's, and he landed in the island without opposition on August 19th.

At the death of Colonel Mackellar, Lieutenant-Colonel Brewse had been appointed to the post of Chief Engineer in the island, and he held that command during the siege which ensued. Under him were Captain Gilbert Townshend, and Lieutenants Robert D'Arcy, W. Johnston, J. R. Douglas, C. Shipley, and J. Fiddes.

The garrison consisted of two English and two Hanoverian regiments. The former were the 51st and the 61st, the whole under the command of General Murray, as Governor; Sir William Draper being the Lieutenant-Governor, and Major-General de Sydow the Brigadier for the Hanoverian troops. Including Artillery, Miners, Corsicans and other foreign levies, the garrison amounted to about 3,000 men. A MS. journal of the siege, which was kept at the time by an officer who was present, and whose initials are A. K., is in the Royal Engineer Library at Chatham. The following extracts taken from that journal give a good account of some of the details, especially those bearing on engineer matters:—

"*Journal of the Blockade and Siege of S. Philip's Castle, in the Island of Minorca*, 1781 *and* 1782.

"Sunday, 19th August, 1781. About 10 o'clock the signal for an Enemy's fleet was hoisted at the signal house of Cape Mola. About 12 one division of the fleet was off the Harbour, and went round towards Sandy Bay, where they landed a large Detachment, and in the evening took possession of Mahon, cutting off part of the baggage of the 51st Regt and the partys of Citaella's and Fornell's, the other division of the fleet remaining at Aliufar bay, where they Disembarked next morning. The Garrison under Arms most part of the night, and much confusion, owing to most of the Soldiers being drunk, and not knowing their proper posts.

"21st Augt. Abundance of working parties ordered, & enough to do for them to get the Fort fit for a siege.

"24th August. Two Deserters came to day from the Spanish Army, who say it consists of about 8,000 men; that they are now waiting the return of their Transports to bring more Cannon and Ammunition, when they intend commencing a Siege, and that Four or 5,000 French troops are expected to join them.

"3rd 4th & 5th Septr. The working parties going on and the Fort getting in better order for a Siege.

"6th Septr. Lt Parker arrived in the *Simon* Packet boat 10 Days from Leghorn. He says it is reported 5,000 French troops, with a

quantity of military stores, are embarking at Toulon, to join the Spanish Army here.

"21st Septr. A Musician of the 51st Regt attempted to desert by swimming, was taken and tryed by a Genl Court Marshal, and Received 1,000 Lashes.

"22nd 23rd 24th 25th 26th Septr. Musketry from the Enemy, generally every dark morning, but does no harm. Wall pieces fixed on the different outworks, and the Young Officers permitted to fire and amuse themselves with them.

"27th Septr. A small party of the enemy discovered in Fort Philipet. The Governor thought proper to order a Capt., 2 Subalterns, and 100 men, with a party of Miners, to destroy it.

"29th Septr. The wall pieces have been well exercised for some days past at every unfortunate Devil who should show his head even at 1,000 Yards distance.

"1st Octr. This morning a work was observed to be thrown up nigh the Mulberry tree, or opposite where Jenkinn's house stood, which seems the beginning of a Battery, as it consists chiefly of sand bags. A good number of Shot and Shell being fired has reduced it.

"9th Octr. Capt. Townshend, of the Engineers, went out in a Boat, and discovered a Battery of three Guns the enemy had made towards the sea, for the purpose of annoying any vessels that might attempt coming into St. Stephen's cove.

"11th October. The Pickets of the Garrison, consisting of 1 Field Officer, 4 Capts., 8 Subalterns, and about 250 men, with a party of Seamen and Miners, were sent early this morning to pull down and destroy the Russian Hospital, which was partly destroyed, and a working party of the Enemy, consisting of 1 Lieut.-Colonel, 2 Captains, 6 Subs, and about 80 Privates, made prisoners. Four of our Soldiers killed on this party.

"13th Oct. This morning the Count de Crillon, 2nd Son to the Duc and Colonel of the Regiment de Bretanges Breakfasted with the Governor."

The result of this entertainment was made clear by the entry of October 16th, which runs thus:—

"The Governor, by this day's orders, publishes to the Garrison that the Duc de Crillon has endeavour'd to Bribe him with a Million of Dollars to Deliver up the Fort.

"15th Octr. The Governor, by this day's Orders, has thought proper to put a stop to all Firing whatever without his or the Commanding Officer of Artillery's orders.

"30th Octr. Various reports in the Garrison concerning the Enemy's operations, most of which we find very much exaggerated or false. Spy Glasses in great fashion, and seem to have increased of late.

"13th Novr. A Shell from the South West Lunette fell into the Enemy's Powder Magazine at Turk's mount, which blew up with a great explosion, and set off a number of loaded shells.

"8th Decr. A Facine Battery ordered to be built, to consist of Six 32-pounders, intended principally against the Philipet wall.

"9th Decr. Old Guia, the Minorquin carpenter, hanged himself. The Governor had some time ago ordered him to be confined on suspicion of intending to Desert to the Enemy.

"12th December. The Governor now orders a constant Cannonade and Bombardment to be kept up at the places where the different Batteries are building. What Sir Wm Draper all along said now proves true—by not keeping a constant Cannonade at the walls from the first they are now so strong that all our fire has very little effect."

This entry, coupled with that of October 15th, refers to the quarrel between General Murray and the Lieutenant-Governor Sir W. Draper. After the siege was over, Draper submitted a long list of charges against the Governor, impeaching his conduct before, during, and after the siege. General Murray was tried by court-martial on these charges, and was honourably acquitted of them all except two, one of which referred to the order of October 15th. In respect of this the finding was:—

"Guilty, although it does not appear to the Court that the order was issued with any intention of inviting the enemy's approach; and the Court do adjudge that in respect to his misconduct in this instance, he be reprimanded in such manner as His Majesty shall think fit to direct, for having given out an order which was detrimental to His Majesty's service, and excluded the Lieutenant-Governor from an authority with which a Junior Officer is invested (*i.e.* the C. R. Art)."

"16th Decr. The new facine Battery finished, and began to fire at the Philipet wall.

"26th Decr. Very fine weather. The Enemy lucky in having such to carry on their works. But more so at the Governor being so saving of his powder. The Garrison might fire a great deal more, but no one dare do it without Orders.

"4th Janr., 1782. Capt. Squire's daughter sent into the Fort by the Duc" (a child, on account of some family disagreement). "She says the Batteries are to be opened on Sunday. If this intelligence proves true, we think it very extraordinary the Duke should let us have such information of his intentions.

"5th Janr. From the forwardness of the Enemy's works, the Governor Orders particular attention to be given by the Guards and Sentries this night, and upon hearing them at work unmasking their Batteries, every Gun and Mortar that would bear upon them to be fired. About 11 o'clock, they were heard at work. The Cannonade and Bombardment commenced and continued till morning. The Powder not spared to-night.

"6th Janr. Various were the opinions in the Garrison this morning whether the enemy would open their Batteries or not. That the noise heard last night might be only a Humbug to expend a great deal of powder for nothing. About 6 in the morning our Doubts were settled

By hearing a Feu de Joie fired by the Spanish Army, Beginning upon the right at Turk's mount, and ending with the French camp at St. Anthony. After Huzzaing three times, and upon the signal of a Rockett, All their Batteries opened at once, and continued firing the whole day without the smallest intermission.

"8th Jany. A Mortar Battery attracts our Attention from the Distance, being at Turassh, upwards of a Mile off, and from the height the Shells go in the air, and the Velocity with which they Descend, we afterwards find they are called Mortars de la Plack. The Mortar and the Bed are cast together, and are of an amazing size and weight—Can throw a shell of 13 Inch near three mile—and the chamber can contain 32 Lib. of Powder. Great number of Shells fall in the Castle square. The Amusement of the Spy glasses and walking about almost put a stop to.

"9th & 10th Jany. The lunettes are now found very useful by receiving the Rubbish batter'd from the works, and keeping the Ditches clear. 29 shells counted in the Air at once, 7 of which fell into the Castle square. . . . A shell fell through a small hole in the Castle, which gives light to the passage betwixt the Governor's and Majr Genl de Sydow's quarters; by its explosion, wounded Capt. Head of the Artillery, and several others in the Governor's. During morn, Another forced itself into Col. Acklom's quarters, broke all his glasses and some of his wine.

"11th Jany. The Prince of Wales's Battery somewhat shattered; declared untainable; the Sentries withdrawn, and the Staircase blocked up.

"14th Jany. No further approaches can be observed, but they seem contented with pelting us most confoundedly.

"19th Jany. Tho' many of the Works are much damaged, yet no practicable Breach is made. . . . Our Soldiers are turning sickly with the Scurvy.

"22nd Jany. A Deserter came in to day from the Turk's mount side. He says the Enemy for some time past have been mining with an intention of blowing up the Marlbro'.

"23rd Jany. Our Miners set to work sinking shafts, in order to Countermine, should the enemy attempt it.

"24thJany. The works cursedly pounded.

"31st Jany. Sickness increases, 40 or 50 men falling sick daily.

"2nd Feby. The Governor orders the Garrison to be examined by the Faculty, who are found to be in a very Scurvy situation.

"3rd Feby. A Council of War to night. We understand the Governor intends surrendering to-morrow.

"4th Feby. A White flag hoisted on one of the Bastions of the Castle, and the firing on each side ceases.

"5th Feby. About 12 o'clock, the Garrison march'd out passing through the Army, and grounded their Arms at George Town; were afterwards marched to Aliore, about 10 miles in the country."

The state to which the scurvy had reduced the garrison, is shown

by the following extracts from the letter of General Murray, reporting the capitulation :—

"Our necessary Guards required 415 men. The night before the Capitulation, the whole able to carry Arms amounted to 660. Of course, there was none for Picket, and a defect of 170 to relieve the Guards, as is evident from the Returns. . . . Perhaps a more noble, or a more tragical scene was never Exhibited than that of the March of the Garrison of Fort S^t^ Philip's, through the Spanish and French Armies. It consisted of no more than 600 old Decrepid soldiers, 200 Seamen, 170 of the Royal Artillery, 20 Corsicans, 25 Greeks, Turks, Jews, &c. The two Armies were drawn up in two lines, the Battalions fronting each other, forming a way for us to march through ; they consisted of 14,000 men, and reach'd from the Glacis to George Town, Where our Battalions laid down their Arms, declaring they had surrender'd them to God alone, having the consolation to know the Victors could not plume themselves upon taking an Hospital."

By the terms of the capitulation an exchange was to be effected between officers of the garrison and those that they had captured during the siege, of whom there were six. Amongst the six British officers released under this clause was Lieutenant Douglas, of the Engineers.

The year 1782 witnessed the close of the war. On January 20th, 1783, the preliminaries of peace were signed between France, Great Britain, and Spain, and were shortly followed by the Treaty of Versailles, which brought about a general pacification. The States of America were recognized as independent; but in most other respects matters remained much as they had been before the war broke out.

The Duke of Richmond, who had resigned his post of Master General, was re-appointed in January, 1784, and he at once began to propose amendments in the Warrant of 1782, by which the number of the Corps of Engineers had been fixed at 75. He now considered that owing to the peace a reduction could be effected; but he was desirous at the same time to benefit the Service by the establishment of a body of Invalid Engineers. The Warrant carrying out his views was dated July 21st, 1784, and fixed the strength from October 1st following as detailed below :—

1	Engineer in Chief	at 44s.	per diem.
5	Colonels	„ 18s.	„
5	Lieutenant-Colonels	„ 15s.	„
10	Captains	„ 10s.	„
10	Do. (Captain-Lieutenants)	„ 6s.	„
20	First Lieutenants	„ 4s. 8d.	„
10	Second Lieutenants	„ 4s.	„
61	Total Active Corps.		

Corps of Invalid Engineers.

1 Colonel	at 18s.	per diem.
1 Lieutenant-Colonel	„ 15s.	„
2 Captains	„ 10s.	„
1 Captain (Captain Lieutenant)	„ 6s.	„
1 First Lieutenant	„ 4s. 8d.	„
1 Second Lieutenant	„ 4s.	„
7 or a total of 68.		

The establishment of this small body of Invalid Engineers was intended for the purpose of receiving into semi-retirement such officers as from age or infirmity were no longer fit for the active duties of their profession. They were to enter the Invalid corps with the rank and pay they held at the time of retirement. Should there be no vacancy a record was to be kept of the names of such officers as should desire to be placed on the list. Once entered in that record, or named for the Invalids, no further promotion was possible. All such officers were, however, liable to be called back for service in Great Britain in cases of emergency. When the list was not full the vacancies might be applied to an increase on the active strength, provided the numbers of the two corps combined were not exceeded.

This Warrant also established the principle of extra pay, and laid down the various rates on a scale which, with one single exception, was maintained until the principle of extra pay was abolished and an Engineer pay substituted. The one exception was that of Gibraltar, which by the Warrant of 1784 was made to rank with home service.

It will be seen that the Colonels Commandant were changed into simple Colonels, though their pay was increased. The Captains and Captain-Lieutenants were increased, and the Lieutenants of both grades reduced in number. The object of this alteration was to form the regimental officers into ten companies of five officers each. The distribution of these companies was to be as under:—

1 in the West Indies.
1 „ Quebec and Jamaica.
1 „ Nova Scotia and Newfoundland.
1 „ Gibraltar.
1 „ Plymouth Division.
1 „ Portsmouth Division.
1 „ Chatham Division.
1 „ Scotland and Newcastle.
1 „ Jersey and Guernsey.
1 „ Surveying and ready for Field Service.

BATTERSEA
PUBLIC
LIBRARIES

Captain John Romer.
Engineer;
circ. 1710.

Gother Mann.
Practitioner Engineer and Ensign,
1763.

The Colonels and Lieutenant-Colonels were given the following commands:—1 at Gibraltar, 1 in the West Indies, 1 in North America, 2 conducting works at home, and 4 for the Committee at the Tower.

It may be interesting to give a list of the officers composing the Corps at this time, with their stations. N.B.—The letter C denotes Commanding Engineer at the station.

Chief Engineer	Major-General James Bramham.
Colonels	William Green, Gibraltar, C.
,,	Mathew Dixon, Plymouth, C.
,,	John Archer, Unemployed.
,,	Harry Gordon, Grenada, C.
,,	John Brewse, Tower Committee.
,,	Hugh Debbieg, Unemployed.
Lieutenant-Colonels	Richard Dawson, Invalids.
,,	William Roy, Survey, C.
,,	John Phipps, Portsmouth, C.
,,	William Spry, Tower Committee.
,,	Thomas Basset, Guernsey, C.
,,	Robert Morse, Quebec, C.
Captains	Abraham D'Aubant, Tower Committee.
,,	Frederick George Mulcaster, Jersey, C.
,,	Elias Durnford, Newcastle, C.
,,	Alexander Mercer, Jamaica, C.
,,	Andrew Frazer, Dominica.
,,	John Marr, Invalids.
,,	Gilbert Townshend, Plymouth.
,,	Archibald Robertson, Survey.
,,	Robert Pringle, Gibraltar.
,,	James Moncrieff, Gosport, C.
,,	John Campbell, Halifax.
,,	Thomas Hartcup, Languard Fort, C.
Captain-Lieutenants	Gother Mann, New Brunswick.
,,	William Twiss, Portsmouth.
,,	John Wade, Antigua.
,,	John Evelegh, Survey.
,,	Matthew Pitts, Plymouth.
,,	William Parker, Isle of Man, C.
,,	Sir Thomas Hyde Page, Dover, C.
,,	Henry Rudyerd, Scotland, C.
,,	William Campbell Skinner, Gibraltar.
,,	Andrew Durnford, Chatham.
,,	Alexander Sutherland, Quebec.
First Lieutenants	Benjamin Fisher, Quebec.

First Lieutenants	.. Charles Shipley, Scotland.
,,	.. Henry Haldane, Gosport.
,,	.. Thomas Nepean, Gravesend and Tilbury, C.
,,	.. John Caddy, Newfoundland, C.
,,	.. William Booth, Halifax.
,,	.. William Fyers, Portsmouth.
,,	.. John Chilcot, Plymouth.
,,	.. Thomas Skinner, Sheerness.
,,	.. John Robert Douglas, St. Vincent.
,,	.. James Stratton, Chester, C.
,,	.. William Johnston, Gibraltar.
,,	.. William Kersterman, Gibraltar.
,,	.. John Johnson, Guernsey.
,,	.. Charles Holloway, Survey.
,,	.. Thomas Whildale, Yarmouth, C.
,,	.. John Humfrey, Quebec.
,,	.. James Fiddes, Survey.
,,	.. Richard Hockings, Plymouth.
,,	.. Robert Beatson, Scotland.
,,	.. Robert D'Arcy, Barbados.
Second Lieutenants	James Lees, St. Kitts.
,,	.. George Bridges, Gosport.
,,	.. William Birch, Jersey.
,,	.. James Glenie, New Brunswick.
,,	.. Lewis Hay, Languard Fort.
,,	.. William Malton, Portsmouth.
,,	.. George Phipps, Portsmouth.
,,	.. Thomas Smart, Gibraltar.
,,	.. Peter Couture, Survey.
,,	.. William Mackerras, Gosport.
,,	.. Richard Dowse, Newcastle.
Supernumeraries	.. Samuel Trevor Dickens, Gibraltar.
,,	.. John Mackelcan, Chatham.
,,	.. John Rutherford, New Brunswick.
,,	.. Douglas Lawson, Plymouth.
,,	.. Ralph Henry Bruyeres, Quebec.
,,	.. William Gordon, Jamaica.

The next Engineer Warrant was that issued on April 25th, 1787, which ordered the designation of the Corps to be altered into that of Royal Engineers. In the same Warrant its rank and post in the army were established. These were to be—

"With our Royal Regiment of Artillery, and whenever there shall be occasion for them to take post with any other corps of our Army, the post of the Corps of Royal Engineers shall be on the right with the Royal Regiment of Artillery, according to the respective dates of the com-

missions of the officers belonging to the Royal Regiment of Artillery and Corps of Royal Engineers."

In a subsequent letter addressed to Major-General Sir William Green, Bart. (of Gibraltar fame), the Master-General explains that this posting only relates to when officers are paraded without men, and that when companies or detachments of the Royal Military Artificers and Labourers were paraded their post would be next the Royal Artillery on their left; officers of Royal Engineers to take post with the several companies or detachments.

On May 21st, 1790, a fresh Warrant authorized an augmentation of 1 Captain, 1 Captain-Lieutenant, 2 First Lieutenants, and 1 Second Lieutenant, all for the active list, thus adding an eleventh company of officers, and bringing up the numbers of all ranks to sixty-six, inclusive of Invalids.

The war which broke out afresh in the beginning of 1793 led to several accessions to the strength. A Warrant dated January 25th, 1793, added 2 Captains, 2 Captain-Lieutenants, 4 First Lieutenants, and 2 Second Lieutenants, making two more companies, whilst another dated on December 11th of the same year added a sixth Lieutenant-colonel. The number on the active list of the Corps was now 77.

On June 9th, 1795, an order from the King added an adjutant to assist the Chief Engineer in such portion of his duties as related to military organization. The first officer named for this post was Lieutenant John Rowley.

In 1796 a new Warrant, dated February 9th, added three Captains, bringing up the establishment to 81.

During this interval there had been two changes in the office of Chief Engineer. William Skinner had died in 1781, and was succeeded by James Bramham, who in his turn was succeeded in 1786 by Sir William Green.

It has been said above that war broke out once more in 1793. On February 1st, in that year, the French National Convention declared war against Great Britain, Spain, and Holland. In consequence of this step a large British force was sent to Holland to aid in its defence. This was placed under the command of the Duke of York. Colonel James Moncrieff, Royal Engineers, was appointed Quartermaster-General.

The following Engineers were attached to the force in addition to Moncrieff:—Captains A. Sutherland and G. Mann, Captain-Lieutenant J. Johnson, Lieutenants J. Rutherford, W. Gordon, R. H. Bruyeres, J. Rowley, and W. Ford, Second Lieutenants W. Stewart, T. R. I'Ans, W. Rudyerd, R. Cooper, W. Bucknell, T. Lacey, C. Lefebure, H. Anderson, and J. Birch.

The first event of the war in which Engineers took a part wa the siege of Valenciennes, undertaken by the Duke of York, th other allies forming armies of observation to protect the besieger The town, which lies on the Scheldt, is much intersected by tha river, which fills its ditches with water, and supplies inundation wherever required. The garrison consisted of 10,000 men of th regular army, besides the National Guard. The inhabitants wer also organized for defence. It was therefore a place of formidabl strength, and the siege a matter of great difficulty. The firs parallel was traced on the night of June 13th, 1793, agains the hornwork of Mons; this was followed by the opening o the besiegers' batteries on the 18th. The trenches were pushe forward steadily and persistently until, on the 28th, the thir parallel was formed by flying sap. From this point minin commenced, and the greater part of the month of July was spen in this subterranean warfare. At length, on the 25th, it wa determined to assault the work in three columns—one Britisl another Austrian, and the third composed of Imperialists. Captai Sutherland, Royal Engineers, guided the British column.

The signal for the attack was the firing of three mines. Th result of these explosions was so successful in clearing away th defenders, that the British were able without much difficulty t establish themselves in the hornwork. The other columns suffere more loss, but also succeeded in penetrating the work. The resul of this capture was that the town surrendered on the 28tl Moncrieff, although on the Staff, had acted as Chief Britis Engineer throughout the siege.

"The batteries which he directed against Valenciennes were foun after the surrender of the place to have done the most damage of an that played upon it."—("Gent. Mag.", 1793, vol. lxiii.)

"Though Colonel Moncrieff was not charged with the direction of th siege, the greatest advantages have been derived from his professiona knowledge, activity, and zeal, particularly in taking and keeping po session of the hornwork."—(Letter. Sir Jas. Murray, July 28, 179 "Gent. Mag.", vol. lxiii.)

The above remark alludes to the fact that the general conduc of the siege was entrusted to Colonel Fromm, the Imperialis Engineer.

In August, the Duke of York laid siege to Dunkirk, and whils conducting the operations Colonel Moncrieff received a morta wound in repelling a sortie made by the garrison.

"Killed, 7th September, 1793, in a sally made by the French fro Dunkirk, Colonel Moncrieff, a brave and experienced officer of the Corp of Engineers. The mortal wound was inflicted by a grape shot of a larg size, which carried away part of the bone behind the ear, fractured th

skull above it, and immediately deprived him of his senses." . . "The talents of young Moncrieff obtained him a recommendation from Sir Henry Erskine to the Military Academy at Woolwich, where he received his education, and whence he was regularly introduced to the Corps of Engineers. His first opportunity of distinguishing himself was at the siege of Savannah, and he used it well, for by his advice the surrender of the place to the French was postponed and finally prevented." . . . "His body was carried to Ostend, and buried on the 10th with military pomp, the Prince and General Ainslie, with all the officers there, attending."—("Gent. Mag.", 1793, vol. lviii.)

Some pages further on, in the same volume, it is recorded:—

"Some circumstances respecting the death of the late Colonel Moncrieff are not generally known. The uniform of the British Engineers is so like that of the French troops, that our officers, to enable their own men to distinguish them, wear a white handkerchief tied round the arm. Colonel Moncrieff, who had neglected this precaution, though frequently reminded of it, was taken for a French democrat by the Austrians, in whose hands he was found by Colonel St. Leger and several officers of the Guards, wounded and stripped. It is generally believed that his death was occasioned by this mistake, for it is not certain that he fell by the enemy."

Captain Sutherland, R.E., who had so gallantly led the British stormers at the siege of Valenciennes, was shortly after killed at the Battle of Lannoy:—

"Oct. 28th. The town of Lannoy was attacked by a corps under the command of Major-General Abercromby, who took four pieces of cannon and about 100 prisoners. Our loss was inconsiderable in point of numbers; but amongst the killed was Captain Sutherland, of the Engineers, whose ability in his profession, and worth in private life, will make him long and sincerely regretted by all who knew him." . . . "Lieutenants Rutherford and Offney, of the Quartermaster-General's department, were wounded, the former by one of our own dragoons, who mistook the Engineer's uniform for that of the enemy."—("Journ. and Corresp. of Sir H. Calvert," by Sir H. Verney, p. 162.)

An entry was made in the same correspondence under date October 12th, 1794:—

"Nymegen. We want Artillerymen, we want a general officer at the head of the Artillery, we want drivers and smiths, we want three Major-Generals of Infantry, we want a Commanding Engineer of rank and experience," &c. &c.

In Sir James Murray's despatch of October 29th, 1793, is the following, referring to Sutherland's death:—

"Unfortunately, Captain Sutherland, of the Royal Engineers, an officer of acknowledged merit, was killed upon this occasion. Though not called upon to be present at the attack he had been induced by his zeal to accompany the detachment."

Nothing further of importance occurred connected with the Engineers during this expedition, which was terminated by the withdrawal of the British force from Holland in February, 1795.

At the commencement of 1794, an expedition was assembled for the purpose of once more expelling the French from the islands they held in the West Indies. General Sir Charles Grey was placed in command of the troops, and he had under his orders the following officers of Royal Engineers: Colonel Elias Durnford, Commanding Royal Engineer; Captain John Chilcot; Captain-Lieutenants Robert Douglas, William Johnston, William Kesterman, James Fiddes, and Lewis Hay; First Lieutenants Richard Dowse, Douglas Lawson, and Richard Fletcher; Second Lieutenant Elias Durnford (son of the Commanding Royal Engineer).

Martinique surrendered to this force on March 23rd, after a dashing attack; St. Lucia on April 1st, and Guadaloupe on April 20th. This latter acquisition was, however, very short lived, as the French recovered the island on July 3rd in the same year. This expedition is interesting from the fact that Her Majesty's father, the Duke of Kent, was present and in action throughout.

One other military incident in the year 1794 remains to be noticed, and that is the capture of Corsica. The fleet under Lord Hood, after the evacuation of Toulon, had assembled in the Bay of Hyères. There was a military force on board the ships of some 5,000 men, under General Dundas, which included Captain J. Nepean, Lieutenant A. De Butts, and Second Lieutenant P. Hughes, of the Engineers. Colonel A. D'Aubant was also present, as a Brigadier, on the general Staff. It was determined to make a descent on the island of Corsica, which was believed not to be very loyal to the Republican cause, the inhabitants being overawed by the French troops. After some hard fighting the harbour and town of San Fiorenzo were captured, and the French retired to Bastia.

At this juncture a difference of opinion seems to have arisen between the military and naval authorities, as to the propriety of attacking that town, and we get a glimpse of the difficulties under which the operation was eventually carried out by Nelson in his letters. It should be said that Lord Hood had taken on board a portion of the land force to act as marines, and with them set sail for Bastia, leaving General Dundas with his staff and the remainder of the troops at San Fiorenzo. On arrival at Bastia the troops under Lieutenant-Colonel Villette, and a detachment of seamen, under Captain Nelson, were landed, the whole numbering between twelve and thirteen hundred men. The loyal Corsicans,

who were about the same strength, joined in the siege, under the command of General Paoli.

We can now take up the story, so far as the Engineers are concerned, by extracts from Nelson's letters and despatches, which begin on March 17th, although the landing at Bastia did not take place till April 4th.

"March 17th. Lieut. Duncan, of the artillery, and a Mr. De Butts, Engineer, came over to examine the ground I had thought eligible for erecting batteries to bombard the citadel.

"March 18th. Went on shore with Mr. Duncan & Mr. De Butts, to examine the ground. They both thought it an eligible situation for erecting a mortar battery; found a most convenient place for landing cannon and stores."

It may here be said that General Dundas threw up the command of the troops on finding Lord Hood determined to act without him. He was succeeded by Brigadier-General Abraham D'Aubant, Royal Engineers.

"March 26th. Our General D'Aubant, with 2,000 as fine troops as ever marched, has thought it improper to attack Bastia, which has only 800 Frenchmen to defend it, and that as to taking it that is impossible. An artillery officer of great merit, Lt Duncan, I requested his Lordship wd ask the General to permit him to come to me. He came with Mr. De Butts, a young Engineer. They agreed with me in opinion, the place might be attacked probably with success."

On April 11th, the batteries that had been thrown up on the surrounding heights opened fire, and a heavy bombardment took place, which was energetically responded to by the garrison. The besiegers' guns had been judiciously planted, and eventually so overpowered the defence, that the governor proposed a capitulation, which was accepted, and terms very favourable to the besieged were granted, "in consideration of the very gallant defence the garrison of Bastia has made." Of this event Nelson writes:—

"At 4 o'clock, evening of the 19th May, a flag of truce was hoisted on board the *Victory*, and a boat went from her to the town, and one from the town to the *Victory*. . . . So many interests, however, were to be consulted, that it was the 22nd, in the evening, before our troops took possession of the outposts." . . . "And on the 20th, General D'Aubant and the whole Fiorenzo army *came on the hills to take Bastia.*"

Lord Hood, in his despatch announcing the surrender, says:—

"I cannot but express in the strongest terms the meritorious conduct of Captain Duncan, of the Royal Artillery, and Lieutenant De Butts, of the Royal Engineers."

The capture of Bastia involved the submission of the whole island of Corsica except the fortified post of Calvi, and this held out

for fifty-one days of open trenches. The siege was undertaken by Lieutenant-General Stuart, who had arrived on May 24th, when he took over the command of the troops from Brigadier-General D'Aubant. Captain Nelson again commanded the naval force. The Engineers seem not to have given satisfaction to the eager captain, as we read several complaints of their want of zeal :—

"By the ignorance and laziness of people in the different departments the General is kept back much longer than he wished. Our advanced battery will not be made this night, I am sure, much to his displeasure. The battery against Monachesco was made in direct contradiction to the General's orders.

"July 9th. I should be sorry that any opinion of mine should cast a censure on an officer ; but at sunset the seamen were ready to proceed with the guns. In about a quarter of an hour the general passed us with the troops for the feint of an attack. In about a quarter of an hour afterwards, the Engineer, Captain Nepean, came from towards the intended battery, and he did not go forward with the workmen till near ½ past 10 o'clock. The General's orders were clear, and were executed, as we know, the next night. And I know no reason but the Engineers not going forward so soon as it was dark that prevented the batteries being made one night as well as the other. The General is displeased, and it has given Captain Nepean a fit of the gout, so General Stuart tells me. . . . the General's expression of anger the night I mentioned—no Engineer to be found ! was public—*not an Engineer to be found !*

"July 14th. I am sure we should get on much faster, but the General has not a person to forward his views. The Engineer sick" (this is probably the fit of gout referred to in the last extract) "the artillery Captain not fit for active service."

In the end the siege was successful, and on August 10th the whole island fell into the possession of the British. They were only able to retain it during two years, and in 1796 it was evacuated, and reverted to the French.

In the year 1799 a treaty was entered into with Russia, in which it was agreed that the two Powers should place an allied army of 30,000 men in Holland, of which 13,000 should be British. In accordance with this stipulation, two divisions were assembled, one under Sir Ralph Abercrombie, at Southampton, and the second, under General Dundas, on the Kentish coast. The Engineers who took part in the expedition were—Major L. Hay, in command; Captains J. Rutherford (who was an Assistant Quartermaster-General) and R. H. Bruyeres; Lieutenants C. W. Rudyerd, S. R. Chapman, and J. Squire; Second Lieutenants Hon. R. Dundas and E. Le Breton. These were the first instalment. The second batch, appointed a month later, were—Captain J. Finlay, Lieutenant E. Handfield, Second Lieutenants G. Dyson and A. Gosset. In September, another augmentation was made,

consisting of Lieutenant-Colonel Twiss (appointed C.R.E. in place of Hay, killed in action), Major W. Mackerras, Captain-Lieutenant H. Evatt, Lieutenants H. Anderson and C. Hayes. There were consequently fifteen Engineers doing Corps duty, and one on the general staff of the army.

Major Hay was promoted Lieutenant-Colonel, in order to give him a rank suited to his position as Commanding Royal Engineer of so large a force. This step led to some altercation, as will be seen by the following correspondence between Lord Howe and Lord Cornwallis. The question of brevet rank, as a reward for service, was at this time the cause of much heart-burning in the Artillery and Engineers, both of which were, as they still are, strictly seniority corps. Although such promotion gave only army rank, and did not interfere with the regimental seniority of the officers, it unquestionably often placed a junior in command over his senior whilst serving in combination with troops of other branches of the service, and when first adopted led to much remonstrance and bitterness. The arguments used in its favour by Lord Cornwallis, although he at the time contemplated that the practice should be very exceptional, were so unanswerable, that in the Peninsular War it was adopted, not only without further objection, but with the warm approval of the Corps, the officers of which realized that in such a measure was based the only hope they could entertain of rising above the dreary slowness of seniority promotion.

"Viscount Howe to the Marquis Cornwallis,

"Seymour Place, Aug^{t}. 15th, 1799.

"My dear Lord—

"As your Lordship may probably have seen in the *Gazette* the promotion of Major Hay of the Royal Engineers to Lieut.-Colonel's rank in the army, which was the first and only intimation I have had of it, and which has taken place so much to the prejudice of his seniors in the corps, many of them now employed on foreign service, I wish to submit whether any steps should be taken by me in justification of those officers who have been past over, or that it must rest, or that in so delicate a matter it may not be more advisable any representation should come from your Lordship.

"I have the honour, &c.

"Howe."

To this, Lord Cornwallis returned the following reply—

Phœnix Park, Aug^{t}, 1799.

"My dear Lord,—

"I have almost on all occasions set my face against any partial brevets in the royal regiment of Artillery and corps of Engineers, as they tend to create great uneasiness and discontent in corps where the promotion is made in regular succession by seniority, and on this ground when Major Hay returned the second time from the West Indies with

Sir Ralph Abercromby, I absolutely refused to suffer Sir Ralph to obtain for him the rank of Lieut.-Colonel, although his request was countenanced by His Royal Highness and Mr. Dundas.

"But, although I have always acted, and shall always as long as I am concerned, continue to act, upon this general principle, and am sensible that it is a delicate matter to depart from it, yet I do not think that any rule respecting rank can be made absolute and invariable without its being in some degree prejudicial to the service and discouraging to the exertions of those who are placed entirely out of the reach of all extraordinary favour.

"Major Hay has been now for the third time selected to attend Sir Ralph Abercrombie, to whose lot the most difficult and irksome part of the service in the present war has principally fallen. That General Officer represented to me that Major Hay was to go with him in very important service as Commanding Engineer, that he expected a junction with troops of other nations, and that from his want of rank he might often be prevented from availing himself of his services, and expressed a hope that I would not a second time put a negative on his promotion.

"Under these peculiar circumstances I did not feel that either in respect to Major Hay, Sir Ralph Abercrombie, or the general good of His Majesty's service, I could be longer justified in withholding my consent.

"I have, &c.,

"CORNWALLIS."

It is not necessary to enter into much detail of this short campaign. The advanced portion of the force under Abercrombie in 130 transports, with a fleet of fifteen sail of the line and forty-five other vessels of war, put to sea on August 13th. They disembarked at the Helder on the 27th, and were at once attacked. A smart engagement ensued, in which the British were successful, and towards night the Dutch withdrew, leaving Abercrombie in possession of the contested point, and this was followed by the capture of the Dutch fleet. Unfortunately, Lieutenant-Colonel Hay was killed in the action, having only enjoyed his hardly-obtained rank for a few days.

Lord Cornwallis thus alludes to the event in a letter to Major-General Ross, dated September 4th, 1799:—

. . . "I lament poor Hay very much, who has left a wife and several children, and, I am afraid, but ill provided for." (This was remedied in a very handsome manner by the Government, who settled a pension of £600 on the widow and of £100 on each of the children.) "The force destined to serve in Holland, which is one of the most considerable in number of our national troops that has ever been employed on the Continent, has now no Engineer of rank or character. Should not the Ordnance say something to the Duke of York? Even if H.R.H. should make no application I should have thought that Twiss, who is certainly

our best, should have the direction, with some assistants who would be more able in point of bodily fatigue."

It was, doubtless, in consequence of this letter that the last of the before-mentioned augmentations of five officers, headed by Twiss, was made to the Engineer strength of the force. Twiss received the brevet rank of Colonel on being appointed Commanding Royal Engineer.

Lieutenant-Colonel Hay, whose early death was a great loss to the Corps, had already gained much distinction on active service. As stated in Chapter V., he was one of the Engineer officers at the memorable siege of Gibraltar under Green.

"He was, when the present war commenced, at St. Christopher's, and, on the arrival of Sir Charles Grey at Barbados, immediately procured leave to embark for that island, and offered his services for the expedition. His professional and local knowledge insured a ready acceptance of that offer, and his zeal, courage, and abilities are well known to Sir Charles Grey and the surviving officers who served at the reduction of Martinique, Guadaloupe, and St. Lucia. Previous to the departure of the army under Sir Ralph Abercromby for the recovery of our islands, that active and able general earnestly requested Captain Hay to accompany him. He again left his family, and again distinguished himself, and was Sir Ralph's confidential friend, and chief and active Engineer. He was also with the general in Ireland, and such was the opinion Marquis Cornwallis had of him that he particularly applied for Major Hay. He was afterwards appointed Commanding Engineer in Scotland . . . . and he followed Sir Ralph from the North, when he was selected to command the Expedition to Holland, and received as an honourable acknowledgment of his services previous to his embarkation the rank of Lieutenant-Colonel. His conception was strong and accurate, and his information solid and extensive. His manners were as mild and unassuming as his mind and conduct were manly and decided, and, indebted solely to his own deserts his character, without effort or ostentation, gradually and forcibly displayed itself to the world through the veil which his own modesty uniformly presented. He was about forty years of age, and promised fairly to fill and grace the highest posts which his profession might enable him to hold. . . . . Colonel Hay, the moment he was wounded, was prepared for the worst, and begged to express his last thoughts and wishes to General Abercrombie, who was near the gallant Colonel, and immediately attended him. . . . ."—("Gent. Mag.," 1799, vol. lxix. p. 818.)

It is not necessary to pursue in detail the further movements of the force. The Duke of York having in the interim assumed supreme command of the British troops, they were advanced in conjunction with the Russians, and fought the battle of Alkmaar on September 19th. This was well contested and bloody, but without result.

"Both parties at night resumed on all points the positions they had respectively occupied the previous day."—(Cust.)

On October 2nd a fresh advance was made, which brought on the battle of Bergen. On this occasion the allies were successful; the enemy were driven back, and the ground occupied by the invaders. Little more was effected. Large reinforcements arrived to strengthen the Dutch and their French allies, and the Duke saw that it was not possible to obtain any real hold of the country. Negotiations for an evacuation were therefore commenced, but for some time seemed likely to be broken off on the question of restoring the Dutch fleet, a matter which the British commander declined to entertain. He, however, consented to send back to France 9,000 prisoners of war then detained in England. The French general accepted the alternative, and a suspension of hostilities took place on October 18th, although it was not till November 19th that the whole of the expedition had been withdrawn. During the time that the negotiations were being carried on, and when it appeared not improbable that they would fail, the question of securing the retreat and protecting the point of embarkation was much discussed.

"The batteries of the Helder and the works which had been added to them furnished a point of support, but Colonel Twiss, Major Finlay, and the other officers of Engineers who had themselves constructed these works, declared that, should they even be defended by 3,500 of the best troops, commanded by the best officers, they could not be maintained for more than two or at most for more than three days. For the Sandhills presented, at a short distance from these works, places under cover of which the enemy might establish mortar batteries secured from the fire of the English. The idea of levelling the Sandhills presented itself, but that did not appear feasible. Admitting, then, that in this space of time the second division should gain the shore, with the whole of its military train, and embark (a thing hardly possible), 3,500 chosen men must have remained a sacrifice for the accomplishment of this object."—("Hist. of Campaign in Holland," 1799, v. 202.)

In addition to the name of Lieutenant-Colonel Hay, killed, the list of casualties during this short campaign embraced the following Engineers as wounded:—Captain-Lieutenant Evatt, Lieutenants S. R. Chapman and J. Squire.

Reference has been made in this chapter to the fact that, owing to the dress of the Royal Engineers being somewhat similar to that of the French officers, casualties sometimes occurred from their being mistaken for enemies. It may not be amiss to state what that uniform was.

In a letter addressed by Bramham to Debbieg, dated December 24th, 1782, he says—

Capt. William Tyers.
Royal Engineers.
1790.

LEIGHTON BROS

"His Majesty directs the Uniform in future to be worn by the Corps of Engineers to be a blue coat faced with black velvet lined with white, with white waistcoat and breeches."

From Order dated November 15th, 1796, we gather the following further particulars:—

"A crimson and gold cord round the Hat, with crimson and gold rosettes or tufts brought to the edge of the brims. The sword to have a brass guard, pommel, and shell, gilt with gold, with the gripe of silver twisted wire. The blade to be straight and made to cut and thrust, one inch broad at the shoulder and 32 inches in length, according to former orders. The sword knot to be crimson and gold in stripes as required by H.M.'s present regulations. The sword to be worn in a cross belt (white) with an oval plate gilt, having the King's cypher with the crown over it, engraved on the middle. To be seen at Kimbley's, Cutler, Charing Cross."

CHAPTER X.

1800-1809.

Capture of Malta by Bonaparte—His Occupation of Egypt—Military Mission to Constantinople—Expedition under Abercrombie—Death of Mackerras, and Fletcher taken Prisoner—Battle of Alexandria—Advance of the Turkish Contingent with Holloway—Battle of El Hanka—Capture of Cairo—Inscription on Pompey's Pillar—Second Expedition to Egypt in 1807—Battle of Maida and Capture of Scylla—Occupation of Cape Town, Buenos Ayres, and Monte Video—Bombardment of Copenhagen, and Seizure of the Danish Fleet—First Peninsular Campaign—Battles of Roleia and Vimiera—Lieutenant Wells taken Prisoner—Advance of Sir John Moore into Spain—The Retreat to Corunna—Walcheren Expedition—Bombardment and Capture of Flushing—Destruction of the Docks—Sir J. Jones's Criticisms on the Leaders of the Force.

THE nineteenth century opened with the first throes of that severe struggle between Napoleon and Great Britain, which, after extending over a period of fifteen years, culminated in the complete overthrow of the French Emperor, and the elevation of the victors to the first rank among nations. It is true that the last decade of the previous century had seen war carried on with more or less success against the republican government of France; but the strife had been intermittent, and the French forces were led by men of a far inferior stamp to the great warrior who was now about to dazzle the world with his achievements.

In 1798 the French Directory assembled a large force in the port of Toulon, and placed it under the command of General Bonaparte. This he led to Malta, and in a few days obtained possession of that powerful fortress, more by the supineness and treachery of the garrison than by any able strategy of his own. The Knights of Malta were dispersed, and a strong French garrison established in the island. Then, after having plundered the treasury, the churches, and all the other public institutions of the island, he set sail for Alexandria. His triumph here was complete. The Turkish forces opposing him were easily overcome, and in a very brief space of time Egypt was under the conqueror's heel. Now, however, whilst all seemed most promising, he was destined to receive a blow which ultimately baffled his projects. The battle of the Nile destroyed his fleet, and cut him off from succour. From that day he was obliged to trust to the country he

was occupying for everything he required. Manufactories had to be started to supply his army with powder, weapons, food, and clothing. Nothing but the supreme energy and power of organization, which were leading features in Bonaparte's character, could have enabled him to recover as well as he did from the crushing disaster he had encountered.

Even after all his efforts, it was soon made clear to him that the dreams of Eastern conquests, in which he had so freely indulged, were not to be realized; he therefore took an early opportunity of abandoning his army and returning quietly to France, leaving his successor to make the best terms he could.

As soon as it became known in England that the French had seized Egypt, the Government began to devise methods for thwarting his designs. Their first step was to send a military mission to Constantinople, to advise with the Sultan and assist him in every possible way in organizing his forces to resist the invader. Brigadier-General Koehler, R.A., was placed at the head of this mission, and under him were three Engineers—Captains C. Holloway and R. Fletcher, and Lieutenant T. Lacy. They arrived at Constantinople (after having narrowly escaped with their lives from shipwreck at the mouth of the Elbe) on March 28th, 1799. In the following June, Holloway was ordered to the Dardanelles with Major Hope, R.A., to devise means of defence for the Straits, the island of Tenedos, and the Gulf of Sinos. When this had been set in motion, the mission joined the Ottoman army, which, under the command of the Grand Vizier, had retired from Egypt to Jaffa. Here they arrived on July 2nd, 1800, and encamped with the army. They now devoted themselves to its reorganization and equipment, and in the necessary preparation for renewing the struggle against the conquerors of Egypt.

On December 29th General Koehler died, and from that time Holloway was placed in control of the mission. The difficulties he encountered were very great. The Turkish troops were utterly demoralized by their easy defeat; the plague was raging fiercely in their midst; the officers were very untrustworthy, and the discipline of the men so loose, that it seemed almost impossible to make them fit once more to face the victorious troops of France.

Meanwhile, other steps were being taken at home. Sir Ralph Abercrombie was named for the command of a force to proceed from the Mediterranean to Egypt. At the same time, a British contingent from India, under Sir David Baird, was to push through the Red Sea, cross the desert, and, on reaching the Nile, descend that river to Alexandria. The Turks were to march from Syria to join the other troops; and with this triple combination the French were to be driven out of the country.

The army under Abercrombie was about 17,000 strong. Major Mackerras was named the Commanding Engineer, and under him were Captain A. Bryce (who, after Mackerras was killed, became the Commanding Engineer), Captain W. H. Ford, Lieutenants J. Handfield, C. Hayes, C. Graham, G. Kennett, Hon. R. L. Dundas, H. J. Brownrigg, J. F. Birch, J. R. Arnold, and J. Squire, Second Lieutenant G. Cardew. Second Lieutenant J. F. Burgoyne was originally told off for this force, but he was afterwards sent to aid in the blockade of Malta.

Much delay arose before the start, it being considered advisable to allow some time for the reorganization of the Turks, a task in which Holloway and his brother officers were busily engaged. At length, however, Abercrombie decided to make his attempt, whether with or without the assistance of the two columns under Baird and the Grand Vizier. He therefore sent Major Mackerras, his Commanding Engineer, in company with Captain Fletcher, to reconnoitre the coast and choose a suitable spot for the debarkation of the troops.

"They had been sent in the *Penelope* before the fleet sailed from Marmorice to reconnoitre the coast; but when off Alexandria they got into the *Peterel*, and in her boat, in the night of February 27th, proceeded into Aboukir Bay, to discover the proper point of landing. In vain was Mackerras advised not to enter too much into the *cul-de-sac* of the bay. His sense of duty and enterprising spirit urged him to advance, and he even landed on the subsequent ground of debarkation. At dawn of day, as he was returning, a French gunboat full of soldiers, the commander of which had been informed of their reconnoitring, and who had expressly sailed with her out of Lake Maadie, where she had been stationed, appeared to windward, and instantly bore down, commencing at the same time a fire from her carronade and small arms. A shot soon disabled the English boat from continuing under sail, and, a musket ball having killed Mackerras, the master of the boat, as the gunboat came alongside, surrendered her. Major Fletcher and the boat's crew were then all allowed quarter, and carried as prisoners into Alexandria, and from thence to General Menou at Cairo. The death of Mackerras was, as well as the severest private loss, a public misfortune; his ability justly obtained the greatest confidence, and placed him in the high station he held in the army. His former services justified the hopes of his acquiring still greater character; and while the man was mourned by his friends, the loss of the officer was universally deplored."—(Wilson's "Hist. of Brit. Exp. to Egypt.")

Meanwhile the expeditionary force had left Marmorice for Aboukir Bay on February 23rd, and arrived there on March 1st. On the following day Abercrombie succeeded in landing his whole strength in the face of the enemy. This brilliant operation was not completed without severe loss, five hundred men having been

killed and wounded; but the moral effect of so dashing an affair was very great on both armies. A smart action took place at Mandora Tower on March 13th, which led to the retreat of the French on Alexandria. On March 21st was fought the battle of Alexandria. The result of the victory was to drive the French back to Damietta, and practically to seal the fate of the campaign. Unfortunately, this advantage was purchased at the cost of the life of the British commander, Sir Ralph Abercrombie having been killed early in the day.*

The movements of the British force after the battle of Alexandria were curiously slow. It was not till April 8th that Rosetta was seized; and on the 19th, Fort St. Julian was taken, after a siege of three days. Early in May a reinforcement of 3,000 men joined the British army, and General Hutchinson, who had succeeded to the command, on the death of Abercrombie, now made arrangements to resume offensive operations.

Meanwhile the Turks, accompanied by Holloway and Lacy, were pushing their way forward to carry out their share in the war. They had started from Gaza on February 25th, and made very slow progress, owing to the dilatory character of the Grand Vizier. Had it not been for Holloway's incessant exertions and strenuous remonstrances, it is doubtful whether the force would have reached the scene of action before all was over. As it was, the end of March was upon them before the desert was reached.

In Withman's "Travels in Turkey" we find constant allusions to the work performed at this time by the energetic Major of Engineers in command of the mission. At page 268 he records that the disposition and order of march were due to Colonel Holloway (he had the local rank of Colonel). On April 2nd, that he delivered, in the name of the Vizier, summonses to the garrisons

* His body was preserved in spirit and taken to Malta for burial. It was there laid in a vault at the salient of a bastion near Fort St. Elmo, which has since always borne the name of Abercrombie's Bastion. It fell to the lot of the writer to be called on to open this vault and remove the remains in the year 1872, the spot where it had been constructed being required for the emplacement of a gun on a lower level. It was transferred to another vault in the same bastion. During the seventy years that had elapsed, the leaden coffin had burst, and the remains were distinctly visible. They were those of a man under the usual height. The hair, which still adhered to the skull, was of a reddish colour. The wooden coffin was decayed, but in parts still clearly traceable. The brass plates which had been on it were transferred to the new oak coffin made to receive the leaden shell. The curious point in this affair was that the whole coffin had evidently been replaced in the leaguer or large cask in which the body had been brought from Alexandria; the hoops were still *in situ*, and the head intact. The staves, although they had given way, lay in all directions around the coffin. This leaguer had been covered with crimson velvet, and was adorned with gilt-headed nails.

of Tineh and Salahieh, both of which places yielded (p. 275); and again, on April 23rd, a summons to the fort of Lesbie, at Damietta. On April 27th the march across the desert, a distance of 150 miles, was completed. Still pushing forward, a battle was fought on May 16th, a few miles from El Hanka, which terminated in the retreat of the French towards Cairo.

As regards this battle, it is recorded in Wilson's "Egypt"—

> "Colonel Holloway, and the officers with him, did all they could to encourage the Turks, but could not effect all they wished. Colonel Holloway and all the British officers present distinguished themselves by their exertions, and the Vizier was sensible of their merit."

In this action Captain Lacy was attached to the division of Mahomed Pasha, and guided the movements of that force.

The result of the battle was to throw the French back on all sides to Cairo, and General Hutchinson pressed forward to besiege them in their intrenchments. These had been made very strong, but were so extensive that the reduced number now at the disposal of the French commander were not capable of properly holding them. On May 21st, the day after the investment, General Belliard capitulated. General Baird's Indian force, with which was Captain Howard Elphinstone as Commanding Engineer, did not arrive till August 10th.

Although Cairo was now in the possession of the British, and the French army of 14,000 men had surrendered, General Menou determined to hold Alexandria, in hopes that a reinforcement, which Admiral Gantheaume was expected to bring, might enable him still to retain his hold on the country. Preparations were therefore made for a siege of the place. The capture of Fort Marabout was a necessary preliminary to completing the investment of Alexandria. This fort was situated on a tongue of land which unites the town to the opposite side of the lake, and was the road whereby the garrison of Alexandria drew in their supplies. We read that, on August 13th, Colonel Anstruther and Captain Bryce, C.R.E., reconnoitred the fort and islet from a boat, and landed under the adjacent heights (Wilson). Major-General Coote was appointed to carry out the siege operations against Marabout, with Captain Ford as his Commanding Engineer, under whom were Lieutenants Graham and Kennett. Coote and his force landed from Lake Marcotis on the 17th, and established himself in a position to begin siege operations. Batteries were thrown up and armed. These brought so heavy a fire to bear on the fort that it was soon reduced to a heap of ruins, and the garrison surrendered on the 21st. In his despatch, General Coote spoke with praise of the prompt arrangements of Captain Ford,

the Commanding Engineer. General Hutchinson meanwhile was making his plans to conduct the siege of Alexandria itself, in conjunction with Captain Bryce. It was attacked on two fronts, the eastern and the western. Hutchinson himself commanded on the eastern side, and Coote, after the fall of Marabout, took charge of the western attack. On the night of the 17th the first parallel was opened against the eastern front, at a distance of 1,200 yards from the place; it extended for about 150 yards, and was flanked by enclosed redoubts. Batteries were then thrown up and armed. Meanwhile, Coote, after demolishing Fort Marabout, pushed forward on the west, and was also constructing batteries on that side, having in his advance had an encounter with a French post which was endeavouring to retreat into the town, but which he intercepted.

On the 26th the batteries opened fire generally. Those on the eastern side consisted of ten 24-pounders, six 12-pounders, and two howitzers. They were principally directed against the right of the French position, but more particularly against a small redoubt which covered the bridge and the right battery of the intrenched line. At the same time the Turkish gunboats took the defenders in flank. The French fire was soon silenced, and Captain Bryce about midday made a bold attempt to ascertain the state of affairs. He discovered that the guns were withdrawn, and thereupon the batteries ceased fire. The garrison now sent out a flag of truce. A three days' armistice was granted, which was afterwards extended; and on September 2nd a capitulation was signed, and the last body of French troops evacuated Egypt.

General Hutchinson spoke thus of Bryce—

"Brig.-Genl. Lawson, R.A., and Capt. Bryce, the Chief Engineer, have both great merit in their different departments. The local situation of Egypt presents obstacles of a most serious kind to military operations on an extended scale. The skill and perseverance of these two officers have overcome difficulties which at first appeared insurmountable."

Bryce received a Majority for his services in the campaign.

Colonel Holloway was knighted by the King for his able conduct of the military mission, and he as well as Captain Lacy received gold medals from the Sultan for the battle of El Hanka. The former also received five pelisses of honour, and the latter one, at different periods during the campaign.

On September 18th, Major Fletcher arrived at Cairo from Alexandria, where he had been detained as prisoner of war since his capture in Aboukir Bay.

One curious incident remains to be noticed in connection with the Engineers in this campaign, which is thus recorded in the "Gentleman's Magazine" of 1803 :—

"It appears by the inscription on the pillar commonly called Pompey's, that this pillar, contrary to all former opinions, was erected in honour of Diocletian by the then prefect of Egypt. For this discovery the learned are indebted to Lieut. Dundas of the Royal Engineers, and Lieut. Desade of the Queen's German Regiment, aid-des-camp (*sic*) to Lord Cavan, who accomplished it with much perseverance and difficulty. The letters were so much defaced by time that it was only during the hours when the sun cast a shadow from them that any observation could be made. In some parts a few characters are totally incapable of being traced. These characters have been filled up by Mr. Hayter. . . . ."

Captain Squire, R.E., and Captain Leake presented a memoir to the Antiquarian Society, in which they also claimed to have deciphered the inscription. Dr. Raine filled up the obliterations for Squire's and Leake's inscription. There is some discrepancy between the two readings, principally in the letters as supplied by Dr. Raine compared with those of Mr. Hayter, and a lengthy discussion arose in the "Gentleman's Magazine" in consequence. The main facts, however, were undisputed. It was proved that the pillar had been erected by Pontius, Prefect of Egypt, in honour of Diocletian Augustus.

Sir Robert Wilson thus describes the incident :—

"It (the inscription) has, however, at length been traced, and this pillar will hereafter be recognized as a monument of British industry and talent. France sent her *savans* to procure the honour of these discoveries, which might interest mankind by promoting science and establishing historical data, but their effort to mark the period when this superb column was erected, or to whose fame it was consecrated, proved altogether fruitless. They even pronounced the deciphering impossible. But their veto against further enterprise did not daunt the enquiring genius of two British officers. Captain Dundas, of the Royal Engineers, and Lieutenant Desade, of the Queen's German Regiment, determined on the attempt. For one hour only in each day, whilst the sun cast a shade on the inscription, could they at all discern the characters, but, after a labour of three weeks, success crowned their perseverance and they traced the inscription excepting 17 letters. . . . ."

It may here be mentioned that in the year 1807 a fresh expedition was sent into Egypt. By this time the Sultan had developed strong French proclivities, and was in warm alliance with Napoleon. After a futile effort to coerce the Turks by sending a fleet to Constantinople, it was determined to make an attempt upon Egypt. It was hoped that by once more occupying that country it might be rendered safe from French incursion, the Government knowing well that Napoleon still had designs in that direction.

A force of 5,000 men under Major-General Fraser was em-

barked at Messina, the Engineers being—Captain F. M. Thackeray, Commanding Engineer, Second Captains J. F. Burgoyne and W. Nicholas, Lieutenants G. C. Hoste and E. Parker, the latter of whom joined for the purpose from Malta.

The results were most unsatisfactory, and the Engineers had little or no opportunity for distinction. The advanced portion of the force reached Aboukir on March 15th, and landed on the following day. Nicholas writes thus on the subject:—

"We landed on March 16th. In the night of the 18th stormed the enemy's outworks and intrenchments, and drove them within their walls. They capitulated on the 21st, and we entered on the 22nd. . . . The first seven days I never pulled off my clothes or changed my linen, and lived on the soldier's ration."—("Royal Mil. Chron.," v. 255.)

Nicholas went with the force under Major-General Wauchope for the attack on Rosetta. It was promptly assaulted, but not taken, General Wauchope being killed. Another force of greater strength was then sent to renew the attempt. It was not Nicholas's turn to accompany this party, but he specially applied to be sent, on the ground of knowing the place, and so was permitted to go.

"We arrived again before Rosetta, but a different system of attack was to be adhered to. We were to destroy the town with shot and shell. We made batteries innumerable; but the difficulty of bringing shot and shells from Alexandria prevented our keeping up so hot a fire as we could wish. We continued in this position before the town from March 22nd to April 21st, the Turks making sorties and annoying us with shot and shell daily during the whole time."—(*Ibid.*, p. 257.)

The siege was then abandoned, and the force withdrawn to Alexandria. Meanwhile a large detachment which had been sent forward to El Hammed on false information was cut off by the Turks. Fraser now found himself wholly isolated in Alexandria, without any prospect of success in the further prosecution of the campaign; he therefore opened a parley with the Turks, and offered to evacuate the country provided the prisoners that had been taken were restored. This was agreed to, and on April 23rd the troops embarked and returned to Sicily.

This force was a portion of that which had been sent by England to join a similar body of Russians in a combined expedition to the kingdom of Naples in the winter of 1805-6, and which had failed in its primary objects in consequence of the withdrawal of the Russian contingent. This abandonment of the undertaking by Russia had arisen from the panic created by the result of the battle of Austerlitz. The British being now without an ally, thought themselves no longer able to maintain the defence of the

kingdom, and withdrew to Sicily, leaving the Neapolitan army to withstand the invasion of the French unaided.

The result, so far as that part of the kingdom was concerned, could not be for a moment doubtful. The Neapolitan army, consisting of raw levies, was completely routed at Campo Tenese, and, in consequence, the whole country, with the single exception of the fortress of Gaeta, fell into the hands of the invaders. No attempt was made to save any of the forts or arsenals. These, with all their stores, equipments, and artillery, were surrendered without further struggle, and were occupied by the French. Of all these losses, the most fatal was that caused by the surrender, without a blow, of the castles of Scylla and Reggio, the possession of which gave to the enemy the full command of the Straits of Messina.

The ease with which they had been enabled to seize the whole military strength of the kingdom rendered the French commanders somewhat foolhardy. At that time England had not shown the metal of which her armies were composed. The great victories of the Peninsular War were still in the womb of futurity, and although it was known that a force of 7,000 British was assembled under Sir John Stuart in and around Messina, it was not thought that they would be sufficiently daring to strike a blow at the vastly superior forces with which Calabria was overrun. In this, however, they were mistaken. Sir John Stuart, observing that the hostile army was much scattered, conceived the plan of landing on the coast with the greater part of his troops, and, by penetrating between the divided portions of the enemy, endeavour to beat them in detail. This he was the more encouraged to do, as the garrison of Gaeta, under the Prince of Hesse, was making a most gallant defence, and he hoped by his advance to create a diversion in their favour.

With this view he quietly embarked a body of 5,000 men on board the transports then lying in the Bay of Messina, and landed them in the Bay of St. Eufemia in Calabria, on July 1st, 1806. The Engineers accompanying the force were Captain C. Lefebure, Commanding Engineer, Second Captains C. W. Pasley and J. T. Jones, Lieutenants G. Lewis, W. Nicholas, G. Macleod, and G. C. Hoste.

As soon as the artillery and stores were on shore, Stuart, although without any cavalry, advanced confidently against what he hoped would prove a scattered and disorganized enemy. The French, however, had in some way received timely notice of his project, and when, on the 4th, the two armies came in contact, Stuart found that the force in his front was fully 8,000 strong. Undaunted by this change, he pushed boldly forward to the

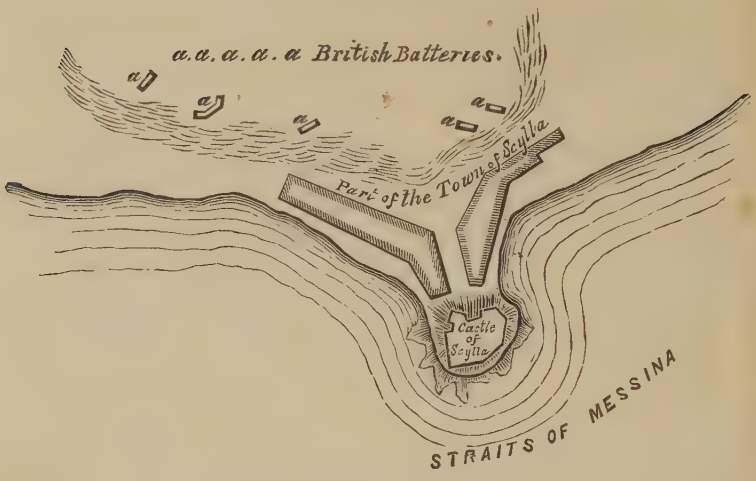
attack, and the battle of Maida was the result. The French were utterly routed, and driven from the field in the wildest disorder. The whole of the Engineers were present at the battle.

On this subject Lieutenant Nicholas wrote—

"Captain Lefebure had his horse shot under him. . . . . I never was so fatigued as when I got on my horse to mount to the field. I had been on horseback the whole day before, returning only at 7 o'clock on the evening of the 3rd, when I got some bread and cheese and wine, and at ½ past 8 was ordered to post a regiment in a wood in the dark, from which I did not return till eleven. I then laid down for an hour under a tree by my horses, and was waked at 12 by the General's servant to mount, as the army was to move in half an hour. I was seven days without taking off my clothes, sleeping with a blanket and cloak under the bushes. . . . . A cannon ball carried away a boat cloak and pad which was strapped on behind my saddle, which by the shock was thrown on one side, and my horse rearing and plunging threw me on the ground. A few inches more must have carried away the whole of my hind quarters; but the shot, of small calibre, passing through the cloak, which was very large, and lined with green baize, lost its effect in going by me" [Nicholas was acting at the time as galloper for the General]. —(Lieut. Nicholas, R.E., in "R. M. Chronicle," v. 253-254.)

After pursuing the flying enemy for two days, Stuart returned to Monteleone, and took measures for the recovery of the fortified posts round the extremity of the peninsula, chief of which was the Castle of Scylla. For this purpose he despatched a brigade under Colonel Oswald, with some light artillery and two Engineer officers (Captain J. T. Jones and Lieutenant Lewis), to commence operations against that post. They arrived before the fort in the night of July 11th, and on the following morning made a close reconnaissance of the place.

The Castle of Scylla was perched on the summit of a rock, about 150 feet in height, which jutted out into the sea, and was connected with the land by a comparatively narrow isthmus. Behind this the ground rose to a height nearly equal to that of the rock on which the fort stood. On the land side, which presented the only possible point of attack, the defences consisted of a bastioned front of unusually lofty profile, which completely defiladed the interior of the work. In this front were spacious and airy casemates, with embrasures looking out on the ground before it. The town of Scylla stood partly on the high land in rear, and partly on the neck connecting the fort with the mainland. The whole of the sappers and miners of the French Calabrian army, as well as its reserve artillery, in all about four hundred men, constituted the garrison under the command of Colonel Michel, a French Engineer of some distinction.



ATTACK ON CASTLE OF SCYLLA.

It was decided that guns should be sent for from Messina for the purpose of breaching the land front, there being at the time nothing heavier than twelve-pounder field guns with the force. Meanwhile a battery was to be thrown up for such guns and howitzers as were on the spot; these were to bring fire to bear on the embrasures of the casemates, and to enfilade the terrepleines of the front about to be attacked. The battery was begun on the night of the 12th; but when completed and armed it was found to be too distant for the work it was intended to perform. A new battery was therefore thrown up about 120 yards nearer, and the guns moved into it.

On the 15th Captain Lefebure arrived, accompanied by three other Engineer officers. There were now present at the attack Captains Lefebure and J. T. Jones, Lieutenants Macleod, Hoste, Lewis, and Boothby. The Commanding Engineer approved of the plans of Captain Jones, but added a third battery for the field howitzers still further in advance of the existing works. From these a heavy fire was kept up with little intermission until the 19th, when the breaching guns arrived from Messina. Two new batteries were thrown up for their reception, to the left of those already in play. These works were begun at nightfall on the 19th, and were carried on so briskly and energetically that by 11 a.m. on the following day they were ready for their guns, although the parapets had been made twenty feet thick. This rapidity of construction was due to the fact that whilst the force

was waiting for the guns a quantity of materials had been accumulated on the spot to form the mass of the parapets. On the morning of the 21st fire was opened, and by the afternoon of the 22nd much injury had been done to the escarps, and it was evident that before long a practicable breach would be established. Colonel Oswald, anxious to spare his men the hazard of an assault, now summoned the garrison, offering them the right to return to France if they would evacuate the place. This offer was accepted, and a capitulation agreed to. On the 23rd the garrison handed over the fort to the British, and embarked for France. During the few days they were under fire they had lost three officers and thirty-five men. These casualties were entirely due to the fire which had been directed against the embrasures of the casemates. Captain Jones, who saw their condition before any steps had been taken to cleanse them, reported that from the indentations on the walls, and the marks of slaughter and destruction visible on all sides, the effects of the fire must have been most disastrous to the defenders.

Lieutenant Boothby, one of the officers who arrived at the siege on the 15th, with Captain Lefebure, only remained before the place for three days. On the 19th he wrote a letter to Captain Burgoyne, R.E., dated from Messina, of which the following is an extract:—

"Our artillery is all obliged to be dragged up a steep precipice, which of course throws upon the reduction of the place considerable difficulty. The column of infantry was accompanied only by two four-pounders, which, after a few shots, they found to be perfectly useless. Sir Sidney Smith dragged two twelves and a mortar up to a point at 700 yards distance, which was too far to be of great service; the gunboats also were of little or no use, tending, by the wildness of their fire, to encourage rather than dismay. Two six-pounders were next got up, but were too light for the service; next, two howitzers and two twelve-pounders being ready, we ran up a breastwork in the night, within 250 yards of the castle. It fell to my lot to have this job, which was rather nervous, as, had we not by the strictest silence kept undiscovered, we must have lost half the party. What favoured us also was, that they were at work in the castle, every move of which we distinctly heard. At daylight, however, I had the satisfaction to find myself well covered from musketry, of which they began from the castle a very plentiful play, which continued for about an hour and a half, until at last they were completely silenced by Dyneley with the howitzers, who threw almost every shell exactly over the spot. We had only one man wounded. All yesterday the twelve-pounders played, and knocked away a gallery which had always been full of musketry, to our great annoyance. The next step that will be taken is four twenty-four pounders within 100 yards of the castle, which certainly must bring it down. The man is extremely active and clever

in his defence, and gives every proof that he is determined not to surrender until breached."*

On July 27th Sir John Stuart arrived to decide on the fate of the castle. At this time it was the almost universal opinion that it should be destroyed, on the assumption that any garrison lodged therein must inevitably be made prisoners whenever attacked in strength. Captain Jones, however, was strongly opposed to this step, and urged the retention of the fort as an advanced post to the army in Sicily. He had observed that the rock at the back of the castle on the sea side could not be seen from any of the adjacent ground, and that boats from Messina would be covered from fire when they had arrived within from 600 to 700 yards of the fort. He therefore proposed to cut steps in the rock, by means of which the garrison could reach the water's edge and be taken off at any time should the fort be considered no longer tenable. Sir John Stuart, after a careful personal inspection, concurred in the wisdom of this advice, and decided to maintain the castle. Lieutenant Macleod was entrusted with the superintendence of the necessary work, which was successfully carried out. At the same time the land front was restored and strengthened. A British garrison was placed in the fort, and held it until the month of January, 1808. They were then attacked by a powerful French force. The defence was maintained until the land front was a heap of ruins. The climax may be described in the words of General Sherbrooke in his despatch of February 23rd, 1808 :—

"On the morning of the 15th inst., Lieutenant-Colonel Robertson having informed me by telegraph that the parapet of the work was destroyed, and that all his guns were dismantled or disabled, I felt very anxious indeed to withdraw the troops, but a continuance of the gale rendered this impracticable until the 17th, when, during a temporary lull (every necessary arrangement having previously been made), the transport boats, protected by the men-of-war's launches, ran over from the Faros and succeeded in bringing away the whole of the garrison, who effected their retreat by the sea staircase to the boats, when they were exposed to a most galling fire of grape and musketry from the enemy till such time as they could pull out of the reach of it.† I am happy to add that the loss of the troops in this exposed situation was only four killed and five wounded, and that of the seamen one killed and ten wounded."

As a matter of fact, the French were scrambling in at the breaches at the very moment that the garrison were retreating by the steps.

In the autumn of 1805, a force of nearly 7,000 men had been

* Wrottesley's "Life and Correspondence of Sir John Burgoyne."

† This was after they had passed the 700 yards of defiladed water.

sent under Sir David Baird to effect the capture of the Cape of Good Hope from the Dutch, it being feared that otherwise that important station on the road to India would fall into the possession of France. With these troops, Second Captain J. C. Smyth was Commanding Engineer, and with him were Second Captain G. Kennett and Lieutenants E. Fanshawe, H. Smart, and H. Vavasour. A portion of the force was landed at Saldanha Bay, and the remainder at Leopard's Bay, between January 4th and 6th, 1806. On the 8th Baird commenced his march on Cape Town, and after an encounter with the Dutch, who were easily defeated, the place surrendered on the 10th, and was taken possession of by the British. No incident of interest occurred in connection with the Engineers.

It was from this force that an expedition was sent to South America under Major-General Beresford, consisting of 1,200 men. Captain Kennett was the Engineer selected to accompany him. In a despatch written by the General, dated Fort of Buenos Ayres, July 2nd, 1806, he says:—

"I had sent Capt. Kennett of the Royal Engineers (not liking myself to leave the troops) in the *Narcissus*, to make such reconnoitring of the enemy's places on the river as circumstances would admit, and to collect every possible information concerning them."

The landing took place at Point de Quilme on June 25th, 1806, and on the next day an action was fought in front of the village of Reduction, in which the British were easily victorious. They then entered Buenos Ayres without further obstacle. In the above quoted despatch, General Beresford wrote—"Captain Kennett, of the Royal Engineers, was particularly serviceable by his intelligence and zeal." This success was very short-lived. The Spaniards soon reassembled in superior numbers, and commenced a siege of the place. On August 12th Beresford left the citadel, drew out his men into the great square of the city, and offered battle. This the Spaniards declined, preferring to harass their enemy by firing on them from the houses. Nothing, therefore, was left to the little force but surrender, and they were made prisoners of war. Just as hostilities were about to cease, Captain Kennett received a shot in the breast from a near window, and fell dead in the arms of his General.

A very extraordinary tale of presentiment is told of this occurrence in the "United Service Journal" of 1836, p. 513; the narrator was a Captain L——, of the 71st Regiment:—

"The day that I quitted Buenos Ayres, as I was going out of the fort on crutches to embark, Capt. K., Royal Engineers, overtook me, and said, 'L., you remember betting me you would lose your leg; now observe

I have not half an hour to live: take my writing desk with you, it contains such and such things, if ever you reach England you will see my father, tell him,' &c., &c. I had to hobble half round the fort to embark, and before I got to the bank of the river—in about, I suppose, twenty minutes—they called to me over the ramparts 'K' is just killed."

An attempt was made to redeem this failure by a fresh expedition, which was sent under the command of Brigadier-General Sir Samuel Auchmuty, consisting of 3,000 men; Captain Squire was the Commanding Engineer, and with him were Lieutenants Boteler, Payne, and Dickenson. They arrived in the River Plate early in January, 1807, and decided on attacking Monte Video, a fortified seaport which it was considered would form an admirable base of operations. A landing was effected on the 16th, and on the 19th the troops advanced to Monte Video. Here they were attacked by the garrison, who came out of the town, but were defeated and driven back. Ground was broken, and batteries erected, which opened fire on the 25th. The siege continued till February 2nd, by which time the ammunition had been nearly all expended. Under these circumstances there was no alternative but to risk an assault without waiting for the completion of the siege operations. This was done on the morning of the 3rd, and in spite of great difficulties, was successful. It was now determined to prosecute the war still further, and accordingly 4,000 more men were sent under Brigadier-General Crawfurd to effect a junction with Auchmuty, Major-General Whitelocke being appointed to the supreme command of the army, now consisting of 8,000 men. Captain H. Elphinstone and Lieutenant R. Jones were the Engineers with this force, Second Captain E. Fanshawe had also arrived from the Cape, so that the Corps was represented by seven officers, Captain Squire being Commanding Royal Engineer. It was proposed to recapture Buenos Ayres, and on June 28th a landing was effected near the town. The place was summoned, but the defenders declined to surrender, upon which the troops advanced, and completed the investment of the place by July 5th. It was then decided to proceed with the attack, and the troops were led into the town. Here they found themselves surrounded and exposed to heavy musketry from the houses, whilst ditches had been cut across the streets, from behind which grape was poured on the attacking columns. The whole affair was grossly mismanaged and a sad failure. At the end of the day, Whitelocke found himself with only 2,500 men, the remainder having all been captured. Under these circumstances he was forced to come to terms. It was then settled that he should evacuate the Plate, in consideration for which all the prisoners would be surrendered.

The outcry in England was very great at this most unlooked-

for disaster. Whitelocke was sent home and tried by court-martial, which sentenced him to dismissal. Captain Squire was called upon to give evidence before this Court.

It having come to the knowledge of the British Government that one of the secret articles of the treaty between Napoleon and the Emperor of Russia at Tilsit involved the combination of all the fleets of the northern Powers against England, it was determined to take the initiative, and seize the Danish fleet with or without the consent of that Power. For this purpose an expedition was prepared with the utmost secrecy, which set sail from Yarmouth Roads on July 27th, having on board 20,000 men under the command of Major-General Sir Arthur Wellesley. The Engineers consisted of Lieutenant-Colonel R. D'Arcy, Commanding Engineer; Captains R. Fletcher, J. F. Birch, and S. R. Chapman; Second Captains C. W. Pasley, H. Goldfinch, and C. S. Rhodes; First Lieutenant G. Collyer. The armament arrived on August 3rd at Elsinore, where it was joined by a detachment of British troops which had been for some weeks in the island of Rugen, under Lord Cathcart, who now assumed the chief command. After a futile attempt to obtain possession of the fleet by negotiation, it was determined to use force, and the troops were landed on August 16th. Some skirmishing ensued, and the operation of throwing up batteries was to a certain extent impeded by the fire of the Danish gunboats. Copenhagen, although strongly defended on the sea side, was comparatively open by land, and the besiegers were able to complete their batteries and commence a bombardment without the delay usually necessary in the attack on a fortified place. On September 2nd the fire commenced from twenty 24-pounder guns and forty-eight mortars and howitzers. Rockets were also used on this occasion for the first time. For three days the fiery tempest raged, and an unceasing storm of missiles was poured upon the devoted city, which suffered dreadfully. No less than 1,800 houses were destroyed and 1,500 of the inhabitants killed. At the end of that time, General Peymann, who commanded the defence, hoisted a flag of truce. This led to a capitulation and the surrender of the fleet to the British. The object of the expedition having been thus gained, the whole force was re-embarked and set sail for England, carrying with them seventeen Danish men-of-war, and naval stores of all descriptions to the amount of 20,000 tons.

The next point of interest in which Engineers took part was the first Peninsular campaign in 1808. Sir A. Wellesley was placed in command of an army of 9,000 men, which sailed from Cork on July 12th. The Engineers were Captain H. Elphinstone, commanding; Second Captain P. Patton, Lieutenants J. A. Williams,

R. Boteler, J. N. Wells, and T. English. They disembarked at Mondego Bay, midway between Oporto and Lisbon, on August 1st, and on the 3rd were joined by the division under Major-General Spencer from Cadiz. The Engineers with this latter body were Captain G. Landmann, Lieutenants E. Mulcaster and C. Mercer. Captain Elphinstone, as the senior, took command of the whole, having appointed Mulcaster his adjutant.

Elphinstone, Landmann, English, Wells, and Mulcaster were present at the battle of Roleia on August 17th. In this affair Elphinstone was severely wounded, and Landmann assumed the command. The latter, in his "Recollections," states that Elphinstone was shot through the mouth, the ball carrying away three of his teeth and the portion of the jaw which held them together. He was placed on board a transport for conveyance to England, and whilst on the voyage, being very seasick, he vomited the piece of jaw with the three teeth attached to it, which had been driven down his throat on receiving the wound.

On August 21st was fought the battle of Vimiera. The same Engineers were present as at Roleia, except Elphinstone (wounded), and with the addition of Lieutenant Wells, who had been attached to Major-General Acland's brigade, and landed with them on August 19th. In Landmann's "Recollections" we have some interesting records of the Engineers on this day:—

"At one period of the action, Sir Arthur was watching with particular attention and interest some movements of the enemy, and was at that moment on the brow of an elevated position. During this time the enemy's voltigeurs were creeping up the hill amongst the bushes, and firing very deliberately at Sir Arthur and his staff. Mulcaster (Adjutant Royal Engineers), had with anxiety been watching these riflemen, and fearing that unless they were quickly disturbed they would very soon succeed in hitting the Commander-in-Chief, he went up to Sir Arthur and in a most respectful manner pointed out his danger, but of which the only notice taken of his good intention was, 'Very well, Sir, I see them.' Sir Arthur, however, was too much otherwise engaged to remember Mulcaster's warning for a moment; and the enemy, acquiring boldness at the indifference manifested towards them, continued to advance gradually, when, after several shots fired by these fellows, which had happily passed amongst the group without effect, Mulcaster repeated his communication, which however, well intended, rather annoyed Sir Arthur by disturbing him in his observation, upon which his Excellency said, 'Very well, sir, go then with such of the dragoons as you can gather, and drive them back.' Tho' there was no cavalry at hand but the small number of orderly dragoons of the 20th Regiment close in the rear, and belonging to the General's staff, yet upon receiving the order he called them up, and, drawing his sword, ordered them to follow him; when in a few minutes, having charged into them, he sabred some and put the

remainder to flight. On riding back he reported to Sir Arthur that he had carried his commands into effect, which called forth a distinct approbation from the Commander-in-Chief." [Landmann states that this was communicated to him by Lieutenant-Colonel Torrens, the Military Secretary.]—(Landmann, "Recollect.," ii. 237-238.)

Lieutenant Wells was taken prisoner in this action. He himself narrated to Landmann how it occurred. During the battle, Major-General Acland observing some forward movement made by the Portuguese cavalry, which he considered were pushing too far in advance, directed Wells to order them to fall back. Upon this, Wells, whose sight was not very good, inquired of the General in what direction he should find them, and was informed that they were just beyond some rising ground to which the General pointed. Wells started off on his pony, and, not finding the cavalry where he expected, advanced over some more ground of the same character, when at length he came upon a body of cavalry which he took for those of whom he was in search. Riding up to the officer in command, he addressed him in French (as he could not speak Portuguese), and directed him to retire. His French was probably not very good, for the officer misunderstood him, and replied, "Que dites-vous, monsieur? Le Général demande si nous voulons nous rendre?" Upon which, Wells replied, "Le Général vous ordonne de vous retirer, monsieur." "Quel Général?" "Le Général Acland, monsieur." "Mais à qui a-t-il donné cet ordre?" "A la cavalerie Portugaise." "Ma fois! Voila qui est plaisant! Allons donc, vous êtes mon prisonnier."

Wells was marched off to Junot, who desired that he should be taken to the rear, where he told him he would find plenty of his "camarades." Then Wells asked, as he had seen the first part of the battle, whether he might not be present till the end of it. Junot was amused at the quaintness of the request, and consented to his remaining with the staff, on giving his parole not to attempt to escape. He therefore witnessed the British victory, and then returned with Junot to Lisbon. The French General took much notice of Wells, and invited him to his table. The young Engineer, with, it must be admitted, some want of tact, asked his host why he had attacked the British at Vimiera, upon which Junot good-humouredly replied, "C'est, mon cher, parceque j'aime mieux donner l'assaut que d'être attaqué." After the convention of Cintra, Wells was released, and rejoined his corps at San Antonio-de-Tojal (Landmann).

Captain Landmann gives a full detail of his own experiences at Vimiera, of which the following may be taken as a specimen. He had been attached to Fane's brigade, and during the pursuit at the end of the battle he saw a party of the enemy's artillery

with a gun, in a ravine endeavouring to escape. He drew Fane's attention to it, and that officer accompanied by his staff, including Landmann, dashed at the flying gun. Landmann cut down the rider of one of the wheel horses, Fane shot one of the other horses, and so the gun was captured. The General picked up from the ground a long green feather which he saw lying there, and, handing it to Landmann, said, "There, my boy, wear that feather; you have rendered yourself worthy of being a light infantry man."

Whilst the convention of Cintra was being arranged, Sir John Moore arrived with an army of 11,000 men, and, landing at Maceira, joined the British force. With him came the following Engineers —Captain J. Squire, Second Captain J. F. Burgoyne, Lieutenants C. Boothby, F. Stanway, W. Forster, and W. D. Smith. Later on, another corps landed at Corunna under Sir David Baird, with which were Captain C. W. Pasley, Lieutenants F. A. Yorke and H. Davy.

The senior Generals having been called to England to give evidence on the subject of the convention, which had caused much popular discontent, Sir John Moore was left in command of the army. It will not be necessary to trace the details of his ill-starred advance into Spain which now took place, followed as it was by the retreat to Corunna.

All the above-named Engineers, with the exception of Stanway, Patton, J. A. Williams, Landmann, and Mercer, accompanied the army, Major Fletcher being Commanding Engineer.

In the retreat, on arrival at Astorga, Moore sent General Crawfurd's brigade by one road to Vigo for embarkation, whilst he himself with the main portion of the army retired on Corunna. Captain Burgoyne and Lieutenant Hutchinson went with Crawfurd; Fletcher and the other Engineers accompanied Sir John Moore.

The duties of the Engineers during this trying time were practically twofold. Some were in advance of the retreating column, reconnoitring the roads, repairing bridges, and in other ways supervising the safe passage of the troops; the others (and these had by far the most responsible and critical duty) were with the rearguard. Their occupation was principally confined to the destruction of the bridges that had been crossed, and in preparing every possible obstacle to impede the advance of the French. Burgoyne was acting in this capacity, and on one occasion had prepared the bridge over the Esla for demolition:—

"As it was necessary to delay the destruction of the bridge to the last moment, in order to permit the stragglers of the army to pass, the French cavalry reached the farther end of it before Burgoyne exploded the charge, but as the other extremity was held by our rearguard, they were unable

to pass it. During the night the French patrols came several times to their end of the bridge, to ascertain whether the English still held it; but, on being challenged by our sentinels, retired. One French dragoon, more daring than the rest, advanced nearly up to the English guard, and a sentry of an Irish regiment, turning round to Captain Burgoyne, said to him, 'Will I shoot that fellow?' 'Certainly not,' was the answer. And the French dragoon, hearing the voices, retired. Before the bridge was blown up, a large body of French staff officers, with an escort of cavalry, were plainly descried on the hill on the opposite bank of the Esla; and Sir John Burgoyne always considered that the Emperor Napoleon formed one of the group watching their proceedings on this occasion."*

Sir John Moore had originally intended the whole army to retreat on Vigo, and Burgoyne was sent forward to report on the capabilities of that place for the embarkation of the troops. Lieutenant-Colonel Fletcher had been sent on a similar mission to Corunna, and he having reported very favourably of that port, Sir John Moore changed his line of retreat in order to adopt it. This alteration did not affect the Light Division, which, as said above, embarked at Vigo.

Just prior to arrival at Corunna, Lieutenant Davy, R.E., was killed whilst destroying a bridge at Betanzos. These changes and casualties reduced the number of Engineers who were at the battle of Corunna to the following:—Lieutenant-Colonel Fletcher, Commanding Engineer; Captains J. C. Smyth, J. Squire, C. Lefebure, J. F. Birch, and C. W. Pasley; Second Captains J. T. Jones and F. Fyers; Lieutenants C. Boothby, W. Forster, W. D. Smith, R. Boteler, J. N. Wells, F. English, E. Mulcaster, F. A. Yorke, and A. Cheyne.

On arrival at Corunna, which was on January 11th, 1809, the Engineers set to work to strengthen their position. It was not possible to effect much, the principal business being to destroy a store of powder which had been landed for the use of the Spaniards. On January 16th the battle was fought, and at its close the British were left unmolested to embark on board their transports. Sir John Moore was killed in this action, and buried in the citadel of Corunna. Sir David Baird, his second in command, had his arm shattered by a grapeshot, so that the conduct of the forces fell upon Lieutenant-General Hope, who attended to the embarkation and return to England.

This disastrous campaign led the Emperor Napoleon to conceive that he could, for a time at all events, neglect all extra precautions to guard against incursions from the British troops. Hitherto he

* Wrottesley's "Life and Correspondence of Sir J. Burgoyne."

had protected his naval establishments on the Scheldt with the utmost care, and with a very large force. These had been of the greatest value to him, and from them he had already launched and fitted out a powerful fleet, which was lying under the guns of the forts constructed to guard the approaches to the river.

Now, however, he thought that he might safely withdraw a large portion of the troops stationed in the district, in order to swell the numbers of the army with which he was about to invade Austria. He decided to trust the protection of his fleet to its own crews, covered by the numerous forts and batteries with which the many entrances to the river were studded, and supported by the fortresses of Flushing, Bergen-op-Zoom, and Antwerp.

The British Government was not, however, so prostrate and paralyzed as he imagined. The establishments on the Scheldt had long been considered a standing menace to England, and, now that they were denuded of so much of their strength, it was decided to strike a prompt and powerful blow, and, if possible, effect their utter destruction, including the demolition of their arsenals.

With this view an army, numbering nearly 40,000 men, was assembled, and placed under the command of the Earl of Chatham. The fleet which took part in the expedition consisted of thirty-five sail of the line with fifty-five smaller vessels, the whole under Rear-Admiral Sir Richard Strachan. The army was originally divided into five different corps, the largest and most important being that placed under the orders of Lieutenant-General Sir Eyre Coote, which was destined for the capture of the island of Walcheren, including the fortress of Flushing, situated at its extreme southern point, and covering the entrance to the Western Scheldt. The Commanding Royal Engineer with this corps was Lieutenant-Colonel R. D'Arcy. Another body of 7,000 men under Lieutenant-General Sir John Hope was to seize upon South Beveland, and capture all the batteries which had been established on that island for the purpose of sweeping the channel of the Western Scheldt. The Commanding Engineer with this force was Captain Squire, Colonel Fyers holding a similar position over the entire army.

The original project contemplated a vigorous and simultaneous attack upon the various points covering the east and west entrances to the river, to be followed by the occupation of all the islands on the coast. The main object of the expedition was the capture of Antwerp, but this must necessarily be preceded by the reduction of Flushing, and the removal of all obstacles to the advance of the fleet. It was hoped that this would be effected before any reinforcements could be thrown into the place. Such was the

scheme of attack, and there is no doubt that, had it been carried out with sufficient energy and promptitude, it would have proved completely successful, in spite of all the difficulties with which it was beset. The master mind which should have controlled the operation and pushed forward, overcoming all obstacles, was not at the head of affairs. Opportunities were lost, time was wasted, and the enemy allowed to rally from their disorder and make every preparation for a determined resistance, so that an undertaking which began very prosperously ended in disastrous failure.

So many difficulties and mishaps occurred in the attempt to attack on various different points at once, that the matter ended by the entire force being concentrated on the Eastern Scheldt, and confining its efforts to the occupation of the islands of Walcheren and South Beveland.

Under these new arrangements, Sir Eyre Coote was to undertake the capture of Walcheren and the reduction of the fortress of Flushing, whilst Sir John Hope was to seize upon South Beveland. The operations of the former began on July 30th, 1809, but, owing to bad weather, Sir John Hope could not disembark his troops on South Beveland until August 1st. When, however, the weather had sufficiently moderated to enable him to do so, he found that the enemy had completely evacuated the island, having spiked all the guns in Fort Baths as well as in the other batteries on the coast.

Meanwhile, the force landed in Walcheren had occupied the whole island except the fortress of Flushing and Fort Rammekins. Preparations were at once commenced for the investment and siege of the former, and for this purpose all the Engineer officers with the army were summoned thither. They were as under: —Colonel Fyers, Commanding Royal Engineer; Lieutenant-Colonels D'Arcy and Pilkington; Captains Rudyerd, Birch, Squire, Pasley, Fanshaw, Macleod, Boteler, and J. T. Jones, who acted as Brigade Major; Lieutenants Calder, Lascelles, Cardew, Hutchinson, Ross, Brown, Harry Jones, Rawlinson, Bonnycastle, Trench, Colby, Longley, Power, McDonald, Dickenson, and Wells, with Meinecke of the King's German Legion. Under them were Sub-Lieutenant Robinson, with 260 non-commissioned officers and men of the Royal Military Artificers.

The fortress of Flushing was enclosed by a line of nine bastions; seven of these were unrevetted, being protected by a broad wet ditch too deep to be forded. The demi-bastions at the extremities were on the sea dyke, and, having no ditches, their escarps were revetted. There were only two ravelins in the whole line, but the dyke bastions were covered by advanced flêches, closed at the gorge with heavy iron chevaux-de-frise. The whole

BOMBARDMENT OF FLUSHING.

of the ground outside the line, except certain detached points, was below the sea level at high water, and could be inundated by sluices constructed in the counterscarp. It was therefore impracticable to form the ordinary siege approaches or to attack *en règle*. The only points on which such approaches could be made were the narrow dykes on either side, from which access could be obtained to the demi-bastions at the extremities of the line. On the other hand, there were many reasons why it was probable that the place might be rendered untenable by a vigorous bombardment. The garrison was known to be composed of inferior troops, the inhabitants were disaffected to the French Government, and there was an almost complete absence of bombproof cover. It was therefore decided to trust principally to the effect of artillery fire, at the same time throwing up the batteries and other works in such positions as would prove useful should it become necessary to form approaches along the dykes.

In order to carry out even this limited plan it was necessary to procure certain stores, more especially tools, and, pending the receipt of these, an attack was made on Fort Rammekins, a work which commanded the entrance to the Sloe passage, an arm of the river which runs into the sea after forming the eastern boundary of the island of Walcheren. Until the fort was captured no use could be made of this passage. Colonel Fyers was directed to undertake its reduction, an operation which he carried out with the utmost facility. Before he had even completed the battery

by which he proposed to breach the escarp, the garrison, consisting of 127 men, surrendered.

This having been accomplished it was decided to break ground against Flushing, although the stores which had been demanded for the siege had not yet arrived. Availing themselves of the small supply of tools which had been used for the reduction of Fort Rammekins, the besiegers on the night of August 3rd commenced their first battery, intended for the reception of six 10-inch mortars. The site selected was on the highest ground that could be found within reasonable distance of the place. It was nearly opposite the centre of the land front, at a distance of 1,400 yards. Two days afterwards, the stores having meantime arrived, a second battery for ten 24-pounders was begun about 400 yards nearer to the place than the first. It was also thought advisable that batteries should be thrown up on the dykes on either side of the town, from whence very advantageous enfilade fire could be brought to bear on many of the fronts.

Whilst these were in progress the garrison made a powerful sortie. The island of Cadsand not having been occupied by the British, the French had been enabled to augment considerably the strength of the garrison of Flushing, by ferrying reinforcements across the Weilinge Channel. The Governor-General Monnet, finding himself now at the head of 5,000 men, determined to assume the offensive, and on the afternoon of August 7th advanced through Old Flushing, and attacked the besiegers on their right. His object in this was not very clear, as he made no attempt to injure their works, nor indeed were there any in progress at that point. Lieutenant-General Graham's division, which opposed him, succeeded in driving him back after a somewhat smart affair, in the course of which it lost about 150 men.

Fresh batteries were added almost daily, until by the time it was intended to open fire there were no less than nine in hand, of which eight were completed and armed. These had been connected by a parallel extending from the first battery round to the western dyke. The line of this parallel was very erratic, it being necessary to keep as far as possible to the higher level of ground irrespective of directions. Much anxiety was all this time felt at the progress of the inundation. A perceptible current was flowing in all the ditches with which the country was intersected, showing that the besieged had opened their sluices, and were endeavouring to submerge the ground occupied by the British. Fortunately it had been discovered that Middleburgh, in the centre of the island, was three feet lower in level than Flushing. By keeping the sluices open at that point at low tide, it was feasible to draw off a large quantity of water twice daily, and

this delayed the rise of the flood. Moreover, there is no doubt that General Monnet was most unwilling to act too vigorously in this matter, knowing that if he admitted a very large volume of water the result would be most destructive to the unfortunate islanders. He therefore endeavoured to limit the flow to such an amount as would incommode the besiegers without laying the whole district under water. Still it became day by day clearer that the flood was rising; all the lowest tracts of ground were submerged, and it was eventually a matter of the keenest anxiety whether it would be possible to keep many of the batteries sufficiently clear for action, much of the parallel being already rendered impassible.

On August 13th the bombardment began. The guns at work were thirty-two 24-pounders, fourteen 10-inch and six 8-inch mortars, two 10-inch and two 8-inch howitzers, in all fifty-six pieces of ordnance. This was aided by the fire of two divisions of gun and mortar boats, as well as some rocket batteries.

On the night of the 13th the flêche in advance of the demi-bastion on the western dyke was stormed, during which operation Colonel Fyers, the Commanding Royal Engineer, was wounded in the chest by a musket ball. The shot came from a piquet stationed in Old Flushing, the distance not exceeding one hundred yards. But for the fact that it passed through some inches of sand at the crest of the parapet over which Colonel Fyers was watching events, it must have proved fatal.

A curious incident occurred in connection with this wound, and is thus related by his Brigade-Major:—

"An order was issued by Colonel Fyers on this occasion" (his being wounded) "that the senior engineer in the trenches should every morning, as soon after daylight as possible, deliver a written report to the Brigade-Major, to be taken to the Commanding Engineer, of anything extraordinary that might have occurred during the night. The first morning, Colonel D.,* an old man beyond sixty, refused compliance, saying he had other things to do, and no solicitation could prevail on him to write a single line. This being made known to Colonel Fyers, he renewed the order, and desired the Brigade-Major to put under arrest, in his name, any officer who should refuse compliance. The third morning Colonel D. again declined, saying it was all nonsense; and on being reasoned with, denied the right of his superior to demand a report from him, because some thirty or forty years previously he had been senior to Colonel F. He was requested to reconsider the matter, and on a decided refusal the Brigade-Major put him under arrest."

After all the preliminary arrangements for a court-martial had

* Colonel D'Arcy.

been gone through, Colonel D'Arcy thought better of it, made his apologies, was released, and ever after furnished his report.

During the whole of the 14th the bombardment was continued with unabated vigour, but the garrison declined to yield. At night it was discovered that they were at work cutting the eastern dyke to let in the sea. Had they succeeded in this the whole of the batteries except those on the dykes would have been completely submerged. A force was therefore sent under Lieutenant-Colonel Pack to stop the work, and to dislodge them, not only from that point, but also from all their outposts on that side of the town. This was gallantly achieved with a loss to the besiegers of five officers and thirty men killed and wounded. Amongst the latter was Captain Pasley, the Engineer officer who led the stormers. This officer received a bayonet wound in the thigh, and was also shot through the body.

On the following day, General Monnet offered to capitulate; terms were consequently arranged, and on the 18th the garrison, consisting of 200 officers and 5,000 men, laid down their arms as prisoners of war.

The news of the capture of Flushing was received with extreme joy by the British forces in Spain, as may be seen by the following extract of a letter written by Captain Mulcaster to Captain Burgoyne, dated Badajoz, September 17th, 1809 :—

"My dear Burgoyne, . . . A mail arrived some days ago from England, bringing papers and divers letters, but none for us. The batteries and Spanish troops of the line here quartered have scarcely finished their loud salvoes in honour of the surrender of Flushing to the British arms. I am sorry that this agreeable news must be clouded. Our poor friend Pasley is badly wounded; he is, however, doing well. He had a musket ball through his body, and a bayonet stab in the thigh. He was wounded leading the storming party which carried one of the advanced works under Colonel Pack. He stuck one Frenchman, disarmed a second, stabbed a third, and was attacking a fourth when he fell. What a desperate dog! Colonel Fyers is slightly wounded. Lord Chatham is very fair in his commendations of us, and loud in his praise of the sister corps."

The remainder of the story of this ill-fated expedition is well known. The inexplicable delay in pushing forward on Antwerp until it was too late for success, and the ultimate concentration of the force upon the pestilential islands of Walcheren and South Beveland, where they were soon prostrated with fever, are matters of history. Of the small body of Royal Military Artificers, no less than thirty-seven died; almost all the remainder were attacked and had to be invalided home. Matters grew at length so bad, that in the month of November orders were received to destroy the docks and

basins of Flushing, together with all the naval defences of the island, prior to its evacuation. The execution of this work was confided to Lieutenant-Colonel Pilkington. A party of 400 civilian artificers and miners was sent over from England to assist the Royal Military Artificers, as the latter had been reduced by deaths and invaliding to under eighty of all ranks.

The demolition of the piers of the flood-gates was the most important and critical part of the work. The difficulty of effecting this was much enhanced by the close proximity of a number of houses, the inhabitants of which were in a state of the most abject terror at the nature of the operations which were being carried on. In the event, when the mines were fired, the result was perfectly effectual, and yet not even a pane of glass was broken. The bottoms of the piers were blown out by a series of small charges, and the superincumbent mass merely subsided without any lateral disturbance.

The whole series of demolitions was equally successful, and at its close the party was withdrawn to England. Second Corporal Thomas Stephens, of the Royal Military Artificers, the senior non-commissioned officer, was promoted Lance-Sergeant for his share in the work.

It is not difficult to trace the causes of this disastrous outcome of an expedition prepared on so large a scale, and from which so much was expected. It was solely due to the incompetence of those who were placed at its head, and this is clearly shown in Sir John Jones's outspoken criticisms, as recorded in his "Memoirs:"

"The nomination of Lord Chatham was forced on the Ministry by George III., who had promised his favourite the command of the army in Portugal, which kind intention had only been frustrated by the general feeling in favour of Sir A. Wellesley; and his Majesty now insisted on his being recompensed for the disappointment. Lord C. was a man so notoriously indolent as to have acquired the soubriquet of the 'late' earl. The appointment, however, was one he earnestly coveted. He was sadly embarrassed in his circumstances, and if he should not attain fame he was at all events certain to acquire the means of paying his debts. The second in command was a man of acknowledged gallantry and of much experience, but sadly deficient in headpiece, if not actually labouring under the aberration of intellect which shortly afterwards caused his ruin. Of the general officers, some were better known on the turf than in the field, and others more celebrated for their convivial than their military talents, and only one or two had any recent military experience. Furthermore, the honours and pensions bestowed on the captors of Copenhagen two years previously drew forth from their snug abodes many of the heads of the military departments under the expectation of obtaining similar recompenses. Thus a veteran who had held a snug and lucrative post at Woolwich for more than thirty years,

and who had never served in the field except as a subaltern, now reappeared on the stage as Commanding Officer of Artillery; and an equally old officer, precisely on an equality with the last described, with respect to experience and service, came forth from an office in London as Commanding Engineer. The Horse Guards also sent forth one of its chiefs, aged and deprived of activity and energy by long official employment, to perform the duties of Quartermaster-General. The Admiral in command of the fleet was also old, and far more distinguished for courage than talent, and for rough temper than consideration. Such was the experience and energy brought together to command a force destined to invade the French territory and contend with the most active and intelligent troops the world ever saw."

This was the verdict pronounced on the leaders of the Walcheren expedition by a man who, from his position on the staff of the force and from his general experience, was well capable of forming a correct judgment, and who wrote these lines many years afterwards, when the keen sense of bitterness and disappointment at the ill-success of the attempt had had time to be softened.

CHAPTER XI.

The Peninsular War.—1809-1812.

Passage of the Douro—Battle of Talavera—The Lines of Torres Vedras—Retreat of the British Army—Advance of Massena—Battle of Busaco—The Lines occupied by Wellington's Army—Jones's Reports—Burgoyne's Journal—Division of the Lines into Districts—Destruction of Fort Concepcion—Blockade of Cadiz — Death of Captain Lefebure — Battle of Barrossa—Pitts's Journal—Defence of Tarifa—Siege of Ciudad Rodrigo—Its Capture—Remarks on the Siege by Captain Burgoyne.

When Sir John Moore marched from Portugal into Spain with the main portion of the army that had been assembled at Lisbon, he left Lieutenant-General Craddock to hold that city with a small British garrison. Included in this force were the following Engineers:—Second Captain P. Patton, Lieutenants F. Stanway and J. A. Williams.

The shattered army from Corunna and Vigo arrived in England in the middle of January, 1809, and steps were at once taken to complete and reorganize the regiments, with a view to their prompt return to Lisbon. This was soon done, and in the month of March they were despatched to their destination. The following Engineers sailed with them:—Lieutenant-Colonel R. Fletcher, Second Captain J. F. Burgoyne, Lieutenants G. Hamilton, C. Boothby, and E. Mulcaster. A fresh division was also sent under Major-General Sherbrooke, with whom went Captains S. R. Chapman and H. Goldfinch, Lieutenant Rice Jones, and Second Lieutenants A. Emmett, A. Thomson, and E. Fyers. Lieutenants W. Forster and R. Z. Mudge also joined in Portugal about this time.

Sir Arthur Wellesley was appointed to the supreme command of the army, which now numbered some 20,000 men. He arrived at Lisbon on April 22nd, and was named Marshal-General of the Portuguese troops, which had been placed under the immediate orders of General Beresford. From this point commenced that glorious series of campaigns which ended in the complete expulsion of the French from the Peninsula.

It is not intended in the following chapters to give a connected sketch of the military operations of the war. Certain events during its course brought the Royal Engineers and their services

into prominence; these will naturally be dwelt upon. Beyond this, where accounts of other military operations have emanated from the pens of Engineers, they being eye-witnesses of what they describe, it has been thought well to include such narratives. Thus we have the following account of the passage of the Douro, given by Captain Burgoyne:—

"May 10th, 1809. The army advance at 7 a.m., and near Villa Nova turn to the right and come by a road down to the Douro, where a few boats come over to them and take over Lieutenant-General Paget and three companies of the Buffs, who get up a high rock of two hundred or three hundred feet by a road, and occupy a large unfinished house called Seminario do Bispo, just above the road and out of the town without resistance: here they were attacked but maintained their post, and General Paget, while encouraging them to advance, was wounded in the arm, which was afterwards amputated. In the meantime, General Hill's brigade were coming over, and the French were gradually forced back through fields with stone walls, and our people occupied more ground, till after about two hours, just as General Stewart had got part of his troops over, the French retired hastily by the road leading to Amarante. On the first alarm, the sentries on the quay where the floating bridge had stood, which they blew up during the last night, retired, and boats coming over the Guards began to pass in that part. General Murray went up the river to A Vintes and crossed it there with a squadron of dragoons, two guns, and one battalion, and coming across the road by which the French retired, had some skirmishing with them; the dragoons charged right into their infantry, took a great many prisoners, and lost between thirty and forty out of eighty-five men. Hamilton" (R.E.) "had been sent to place some riflemen, and on his return met the dragoons charging down a lane; finding, if he persevered, he must be run over, he thought it better to turn round and charge with them, and got shot through both thighs. I had been sent to collect boats at A Vintes and Arnelas, which having done I was returning, when I heard the firing, and got over the water just after General Hill's brigade had landed. Three guns were taken in retiring, most of the horses being wounded. The French lost a great many men yesterday and to-day, and a great number of prisoners were made; all their sick, &c., left behind."

Captain Burgoyne was not at the battle of Talavera, having been sent on a reconnoitring expedition, and only rejoining four days after that event; but in his journal he thus describes it:—

"August 2nd, 1809." . . . . "Went on to Talavera de la Reina, a town on the Tagus, over which is a bridge; find poor Boothby (R.E.) had lost his leg at the battle, but is in a fair way for recovery.* . . . The extent of the line taken up was about two miles; the right was on Talavera,

* Lieutenant Boothby, after recovery, retired from the Corps, and afterwards took Holy Orders.

which town is immediately on the Tagus, and the left on the steep heights of Madellin ; beyond these heights is a valley of about half a mile wide, which separates them from a ridge of rugged mountains which runs nearly parallel to the river Tagus. In front of the heights of Madellin is a gully through which passes in winter a small stream from the mountains, and beyond it the ground is elevated and plain, but considerably lower than the heights. Between Talavera and the heights the ground is low and flat, with a very small rising ground about midway between and rather advanced, on which a redoubt was begun. The British took the left of the line, having their right on the little rising ground ; the Spaniards extended from thence to Talavera and the river. The heights and ground in front of them are entirely open, as well as that part of the flat on which the troops were drawn up, but in front and rear of them at a short distance were vineyards and wood, not very thick. General Mackenzie's division of 3,000 or 4,000 men were in advance on the river Alberche, where the enemy came down on July 27th, and taking them by surprise drove them in ; they retired quickly, but in good order. In the evening the French army were close in front of our troops, and during the night they made attempts to gain the heights of Madellin, in the first of which they had absolutely got on the summit before it was discovered they were the enemy ; they maintained, however, but a momentary possession of them, being driven back by the 29th Regiment with the bayonet. On the 28th, the first attempts of the enemy were directed to gain the heights by determined attacks in column from the valley, in all of which they were repulsed ; they then made a general furious attack along the whole British line, which was likewise repelled. At close of day the action ceased, and on the morning of the 29th it was found they had retired beyond the Alberche to their original position, leaving twenty guns in the wood. The Spaniards were scarcely engaged at all, except a few immediately adjoining our right, and most of these behaved so ill that General Cuesta had seventeen executed by lot."

"April 3rd, 1810. Captains Squire and Holloway, and Lieutenants Meineke,* Dickenson, Trench, Piper, Tapp, Reid, and Hulme, of the Engineers, arrived at Lisbon on the 28th ult. Lefebure, of the Engineers, with the rank of Major, and Bird, Nicholas, Wells, &c., are gone to Cadiz."

The Lines of Torres Vedras.

The design and construction of these celebrated lines were so entirely the work of the Royal Engineers, that it is proposed here to give a brief description of them.

The original idea of creating a defensive position at this point was due to Lord Wellington himself. The results which sprang from the battle of Talavera had shown him but too plainly that

* King's Hanoverian Legion.

SKETCH OF GROUND OCCUPIED BY
TORRES VEDRAS

The general Line of the Redoubts is shewn -●-●-

no confidence was to be placed in the Spanish army, and that in his future operations he would have to trust entirely to his slender British force and to his Portuguese allies. Matters, indeed, at that time looked extremely critical. The French armies were in such preponderating strength, and the resources available to encounter them so limited, that nothing beyond a strictly defensive policy seemed feasible. A French advance on Portugal was imminent; to cover Lisbon was therefore the first consideration. Beyond this, there was the serious contingency to be faced, that it might become necessary to abandon entirely the defence of Portugal, and to embark the army. It was therefore absolutely imperative to take such measures as might facilitate both operations.

To secure the latter object, which was the first to be taken into account, a point for embarkation was selected at the extremity of the peninsula, on which stands Fort St. Julian. Here there was a small bay not over convenient for the purpose, and but partially protected from the high seas which prevail on that coast; it was, however, covered by the guns of the fort, and the form of the peninsula rendered defensive works comparatively easy. The fort itself required little or no development, but a large enclosed work was thrown up on the high ground in its front capable of containing a considerable garrison, to hold the position whilst the embarkation was proceeding. Should time permit (as it afterwards did), it was intended to enclose the entire peninsula with a line of mutually supporting redoubts.

Having thus arranged for the security of his proposed point of embarkation, Lord Wellington next turned his attention to the protection of Lisbon. That town was admirably situated for defence, and was so solidly constructed as to be almost incombustible; it was, therefore, considered that no strengthening works were necessary on the spot, and that it might be confided as it stood to the irregular efforts of its inhabitants, supported, as they would be, by a large force of the national militia. The energies of the British Engineers were, therefore, entirely devoted to the defence of the country in its front.

A glance at the map will show that Lisbon is situated on the right bank of the river Tagus, at the eastern side of a large peninsula formed by that river and the sea, by the latter of which it is bounded on the south and west. A line of defence on the north starting from the coast, crossing the peninsula, and terminating on the banks of the river at a point below which it was impossible to cross, would secure the whole of the enclosed ground until the line had been forced. Nature had done much to facilitate its construction. Two ranges of heights of considerable

command, and at many points extremely rugged, cross the peninsula from Torres Vedras and Ericeira, respectively, uniting in the vicinity of Alhandra. Only four roads traverse the peninsula on the west of the Tagus, all having Lisbon for their objective. Three of these cross the heights by passes, whilst the fourth runs near the river, but is under the command of the bluffs with which the ranges of hill terminate near Alhandra. It is also swept from the high ground farther back near Villa Longa. The defence of these roads was the main object.

Some time previously (October, 1809), Lord Wellington, accompanied by Lieutenant-Colonel Fletcher, as his C.R.E., had made a personal reconnaissance of the ground, and directed that the Engineers should examine and sketch carefully all the salient features of the country. He at the same time ordered work to be begun as soon as possible at Monte Graça, Torres Vedras, and St. Julian. This was at once done, and on November 4th Captain Williams laid out the trace of several works at Monte Graça, whilst four days later Captain Mulcaster broke ground at Torres Vedras. The redoubt at St. Julian had been begun on November 3rd, under the superintendence of Captain Wedekind, of the King's Hanoverian Legion, one of the Assistant Engineers.

Captain Mulcaster, whilst engaged on this redoubt, wrote the following characteristic letter to Captain Burgoyne:—

"Torres Vedras, January 2nd, 1810. I trust my dear Burgoyne, you will believe me sincere when I wish you many, many happy returns of this (I think) vile season. I have a note from Goldfinch (R.E.). He tells me that we are on the eve of a war with America. *Viva!* What you call 'properly in for it,' diving as hard as we can. Ministers, at all events, seem determined that the nation shall not pine in inactivity." . . . .
"My intrenchments are getting on, but not so rapidly as I had hoped, for I have met with a large proportion of rock and hard gravel, and have a month's work in store to finish completely and give myself a week over. I wish you could see my intrenchments. Unlucky dogs that ever have to attack them! There are so many redoubts in store that I fear the army will retire upon us before we can advance to it. I, however, sincerely hope that you will come in for all the good things going, only think occasionally of your less fortunate friends. Adieu."

These works were carried on all through the winter. Meanwhile the ground had been carefully sketched throughout the district, and a general scheme of fortification prepared for the protection of the passes and other vulnerable points. Early in February, 1810, it was found practicable to begin active operations. The defences of Mafra were placed under the supervision of Captain Ross, who commenced on February 17th. Ericeira, under Lieutenant R. Jones, was begun on the 19th. Montechique

was also started on the same day by Captain Mulcaster, who had by that time practically completed the defences of Torres Vedras. The redoubts for the high ground before Via Longa were begun on February 24th, under Lieutenant Stanway, and those at Ponte de Rol under Lieutenant Thomson on March 26th. In the early summer, the line of advanced redoubts intended to cut off the peninsula of St. Julian, which has already been referred to as in contemplation, was also carried out under the superintendence of Captain Squire.

Lieutenant-Colonel Fletcher was in supreme command, assisted by Captains Chapman and Goldfinch, until July 6th, when they all three, as well as Captain Squire, were recalled to the head-quarters of the army, and Captain John T. Jones took over charge.

The officers left under his command were Captains Holloway, Williams, and Dickenson, Lieutenants Stanway, Thomson, Forster, Trench, Piper, Tapp, Reid, and Hulme.

It was intended that the lines should be traced in such a manner as not to impede the movements of the army, which might be called on to assume the offensive at any moment and in any direction. For the same reason their defence was to be entrusted almost exclusively to the Portuguese militia, the British forces being massed at convenient points in rear. These considerations led to the adoption of a system of detached redoubts, leaving the intervening spaces more or less open. The security of closed works on considerable heights gave great confidence to the raw levies posted within them, and had they been called on to make an active defence, there is no doubt that the wisdom of the general design would have become apparent. The only exception to this system was on the right of the line stretching from Alhandra to Aruda. Here the rugged character of the heights rendered it easy by a little scarping to adapt the ground to a natural continuous line. The redoubts at all other points were placed on the most commanding positions, and were traced so as to bring their artillery fire on the roads and other weak places in their front. They trusted for their own defence to the strength of their profile, and to the musketry fire from their own parapets, as well as from those of the adjacent works. Where practicable and necessary obstacles, such as abattis, trous-de-loup, and inundations, were created to cover the front from any sudden attack. The redoubts were of every variety of trace, to suit the demands of each separate case, and numbered no less than a hundred and fifty, their capacity varying to contain garrisons of from 50 to 500 men, and from two to six guns each.

All the roads and bye-paths leading through the defences were blocked, and made practically impassable, whilst the interior

communications in rear of the lines were developed to their fullest extent, and when feasible rendered available for all arms.

About the end of August news reached Lisbon of the premature fall of Almeida, a post which it had been hoped would maintain a stubborn and lengthened resistance. The result of this calamity was the enforced retreat of the British army. The fears of the public authorities at this juncture prompted them to give every possible assistance to the Engineers in their effort to complete the works. Labourers were conscripted for a radius of fifty miles, and at one time upwards of 7,000 men were employed. Every nerve was strained to push forward the defences.

"The young officers, now for the first time placed in charge of extensive districts, exerted themselves with a zeal which knew no limits, and everywhere throughout the lines a spirit of honourable emulation proved highly advantageous to the progress of the work."*

The results of Lord Wellington's foresight, and of the skill of Fletcher, Jones, and their comrades, is well known and need be but briefly referred to here. Marshal Massena, firmly convinced that the retreat of the British indicated an early embarkation and the complete abandonment of the defence of Portugal, pushed forward with the utmost rapidity. He had received no intimation of the obstacles so energetically created in his front. Sanguine therefore of success, and burning to drive the enemy in disorder to their ships, he hurried on by the single line of road leading from Viseu to Coimbra, traversing the heights of Busaco. Here Lord Wellington gave him his first check. Calling in the divisions which had been guarding the line of the Tagus, the whole British force was massed on September 26th, 1810, and posted in a favourable position on the heights of Busaco, thereby denying the road to Coimbra and Lisbon. On the following day the French attacked, but were driven back after a sanguinary contest with a loss of 2,000 killed and over 6,000 wounded. Burgoyne, Goldfinch, Rice Jones, and Chapman, were present at this action.

Massena was not to be daunted by such a check as this. On the same afternoon he made a most skilful, though hazardous, flank movement to his right, and succeeded in reaching another road to the north of Busaco, which he found unguarded. The Portuguese corps, to which its defence had been entrusted, arrived only in time to see the French in possession, and were compelled to retire. Wellington thus found his position turned, and the principal results of his victory lost. He therefore commenced

* Jones's "Sieges in Spain," vol. iii. p. 20.

retiring leisurely towards his lines. Massena, finding that no attempt was made to dispute the passage of the Mondego, felt sure that all was over, and that the British were in full retreat to their ships. He therefore left all his sick and wounded in Coimbra, where a few days afterwards they fell into the hands of the Portuguese. He himself hurried forward with his whole force in rapid pursuit, trusting, at all events, to harass the embarkation, and probably capture the rear guard. On the afternoon of October 10th, his cavalry and advanced guard drove the British out of Sobral, and then for the first time he discovered the true nature of the impediment in his front. Meanwhile, the rear division of the British army had marched into Arruda, and completed the occupation of the entire line. That all was ready for the reception of the army may be seen by the following report sent to Lieutenant-Colonel Fletcher by Captain J. T. Jones, in command at the time:—

"Alhandra, October 6th, 1810.

"I duly received your letter from Leiria, and I can now venture to assure you that every preparation for an instant defence of the lines is complete, and you need be under no apprehension for our credit, even if the enemy attack as the rear division enters the works. The moment I knew of the army having commenced its retrograde movements, I commenced our final preparations, and we have neither spared houses, gardens, vineyards, olive trees, woods, or private property of any description; the only blind to the fire of the works now standing is that beautiful avenue of old trees in the pass of Torres Vedras. The Juez da Fora and inhabitants pleaded to me so hard for the latest moment lest they might be unnecessarily cut down, that I have consented to defer it till the day before the troops march in, and as I have trustworthy men with axes in readiness on the spot, there is no doubt of their being felled in time. The pine woods on the Torres heights are down and formed into abattis. The abattis at Via Longa is also complete, the openings for communications being stopped up, the cut and salt pans are full of water, and Lieut. Stanway will finish levelling the banks, &c., to-night. The water casks and hand grenades are furnished to every redoubt. The powder is in the cases to load the mines, and the officers, each in his own district, is prepared to meet the divisions. The telegraphs for the front line of posts were forwarded from Lisbon yesterday. It is lucky we commenced dressing off so soon, for now everything is in confusion, the people are all running away, and a string of men, women, and children, in cars, on animals, and on foot, are crowding every road to Lisbon." . . . "I flatter myself you will be altogether surprised at the formidable appearance of our scarps here, and much pleased with the quantity of work of every nature done since your departure. When I heard of the Busaco business, I began to be alarmed for the consequences of having done so much, for if the lines had not come into play, the expense would most likely have been cavilled at as unnecessary, but

now of course only the benefit derived from the strength of the works will be considered."

Captain Burgoyne, in his journal, thus records his share of the occupation of the lines :—

"October 8th, Torres Vedras Orders arrive for General Sontag, who is appointed to command in this district. Mulcaster" (R.E.) "is the regulating officer, whose duty, as is laid down in his instructions from Lord Wellington, is to make all the arrangements as one of his staff for the defence of his post. As General Sontag had not arrived, nor Mulcaster, nor the militia, &c., appointed to this district, I assisted General Picton in making a temporary arrangement with the Portuguese troops of the line. Besides General Picton's division, General Campbell's and General Colman's brigades of Portuguese arrive here, and Colonel de Grey's brigade of heavy cavalry are in front, who report our pickets having being driven in near Caldas. For the defence of the district of Torres Vedras, the 58th Regiment" (British) "of 300 men, a Portuguese regiment of the line, 140 artillery" (Portuguese) "regulars, four *ordenances* artillery per gun, and three regiments of militia are allotted, and if this part is threatened, another regiment of British and another of the line" (Portuguese) "will be added. Mulcaster and Thomson" (R.E.'s) "arrive. Heavy rain last night and this day. At 8 p.m. receive an order from Lord Wellington, appointing me regulating officer of the Bucellas district No. 4, similar to Mulcaster's. The district extends from the Pass of Bucellas to the banks of the Tagus in rear of Alverca, and extends along the ridge of the Sierra de Serves, then to the right across the mouth of the Valley of Cabo to the Tagus. It contains sixteen redoubts and batteries, on which are mounted thirty-seven 12-pounders and twenty-two 9-pounders, and the works are calculated to require 2,660 infantry. At present 1,100 militia infantry, 500 *ordenances* artillery, and 8 Portuguese artillery of the line, are allotted to it, the artillery to be assembled at head-quarters (Bucellas) immediately."

We also have the following record on the subject from the memoirs of Sir John Jones, who had been in chief command over the construction of the lines :—

"Happily every measure was complete, the new works armed, the ammunition placed in the magazines, with provisions and water in each redoubt, the abattis formed, the roads and bridges mined and charged for explosion, telegraphs established and mounted, guides held in readiness to meet the retiring columns, and conduct them to their respective points of defence, when, on the day previous to their approach, the forerunners of the army, and immense crowds of fugitive Portuguese—men, women, and children—blocked every road, set all authority at defiance, and rendered further exertion impossible. The autumnal rains set in at this very moment, pouring down in torrents, accompanied by severe thunder and lightning, filling the streams and watercourses, and rendering the roads deep and heavy, and furthermore putting the solidity of the

field defences to the severest test. Notwithstanding this *contretemps*, and the pressure of the terrified and confused rabble which poured in on every point, no error of arrangement occurred, and each column reached the ground assigned to it with regularity and precision, and when the French approached, presented such a formidable appearance that Massena, after making a close personal reconnaissance, ordered his army to halt."

The following was the letter of instructions from Lord Wellington, addressed to the several Engineer officers whom he appointed in charge of districts:—

"Head Quarters, Rio Maior,
"6th October, 1810.

"Sir,

"I enclose a memorandum, by which you will see the manner in which I have divided into districts the country which has been fortified between the Tagus and the sea, the objects for which this division has been made, and that you are appointed regulating officer for the district No. ——. I likewise enclose a list of the redoubts and works in that district, stating the number with which each is marked, the number of guns it contains, and the number of infantry deemed necessary for the defence of each. The business of your situation as regulating officer of district No. —— is to arrange the troops in their several stations when they will be sent into the district to occupy the redoubts, to take charge of the mines intended to blow up the roads and bridges, and to carry my orders in the district into execution till an officer to command the troops within it will be appointed. You are then to assist him in making his arrangements as one of his staff, and in the defence of his post, with your professional abilities. "(Signed) WELLINGTON.

"Captain ——, Royal Engineers."

The Districts were to be as follows:—

No. 1. From Torres Vedras to the sea. Head-quarters at Torres Vedras.

No. 2. From Sobral de Monte Agraça to the valley of Calhandrix. Head-quarters—Sobral de Monte Agraça.

No. 3. From Alhandra to the valley of Calhandrix. Head-quarters—Alhandra.

No. 4. From the banks of the Tagus, near Alverca, to the Pass of Bucellas, inclusive. Head-quarters—Bucellas.

No. 5. From the Pass of Freixal, near Bucellas, inclusive, to the right of the Pass of Mafra. Head-quarters—Montachique.

No. 6.—From the Pass of Mafra to the sea. Head-quarters—Mafra.

The Regulating and other Engineer Officers were told off as follows:—

No. 1. Captain Mulcaster; Lieutenant Thomson.

No. 2. Captain Goldfinch; Lieutenant Forster.

No. 3. Captain Squire; Lieutenant Piper.
No. 4. Captain Burgoyne; Lieutenant Stanway.
No. 5. Captain Dickenson; Lieutenant Trench.
No. 6. Captain Ross; Lieutenant Hulme.

A very brief inspection convinced Massena that he had been foiled, and he at once retired from Sobral, which, on the following day, was reoccupied by the British. After one or two feints, which were never intended to be serious, and which only served to keep the defenders on the alert, the French went into cantonments between Santarem and Rio Maior, where they intrenched themselves. The British, on their side, advanced out of their lines, and took up a position in such close proximity to the enemy, that the foremost sentries on either side were posted on the banks of the Rio Maior, the river alone dividing them. Early in March, having exhausted all the supplies to be levied from the surrounding district, and feeling that the British position was impregnable, Massena retired, completely foiled at all points, his army discouraged, and his resources greatly crippled.

In the beginning of December, some movements of the French had led to a fear that they might attempt a diversion on the left of the Tagus, and steps were promptly taken to cover Lisbon from any insult on that side. A chain of redoubts, seventeen in number, was thrown up on the line from Almada to Trafaria, under the superintendence of Captain Goldfinch. No movement was, however, made on that side, and the French remained quiet in their cantonments.

The whole of the actual work in the construction of these lines was performed by Portuguese labourers and mechanics, assisted by their local militia. The number of officers of Engineers engaged in superintendence never at any one time exceeded eleven, and often fell below that number. Attached to them were two Hanoverian and four Portuguese officers as assistant Engineers, eighteen of the Royal Military Artificers, and 150 soldiers of the line, mostly artificers selected from the regiments at Lisbon.

"In some of the districts a subaltern officer of Engineers, with that small number of English soldiers" (the 150 men were distributed in parties of two or three), "utterly ignorant of the language, directed and controlled the labours of a thousand or fifteen hundred peasantry compelled to work, many at the distance of forty miles from their home, whilst their own lands lay neglected."*

Nor was this responsibility confined to the Engineer officers alone.

* Jones's "Sieges in Spain," vol. iii. p. 68.

The non-commissioned officers and men of the Royal Military Artificers were also necessarily placed in situations of great power. Two of them, Corporal Wilson and Private James Douglas, received promotion on account of their energy and zeal in this service. An amusing anecdote is recorded of the former :—

"At Torres Vedras Corporal Wilson had charge of a work, and a party of the Portuguese Ordinanza Militia was placed under his orders to execute it. Two of the men were put to a task to be completed within a certain time, but regarding the work as impossible, they refused to comply and complained to their officer, who took their part and was inclined to censure the corporal. However, with more manliness than soldier-like propriety the corporal offered to bet the officer a dollar that he would accomplish the task by himself within the time. The bet was accepted ; Corporal Wilson stripped, easily won his dollar, and prevented the recurrence of similar complaints during the progress of the lines."*

During all the earlier period the Engineer officers had to undertake the duties of payment as well as superintendence, but eventually it was found absolutely necessary to relieve them of this work, which, besides being very onerous and arduous, was strictly contrary to regulation for Engineers to be called on to perform. Regular paymasters were therefore appointed to take over the accounts and pay the labourers. The total cost of the lines, including those of Almada, reached close upon £200,000.

Lord Wellington thus recorded his opinion of the mode in which the operation was conducted in his despatch to the Earl of Liverpool, dated Cartaxo, November 21st, 1810 :—

"It is but justice to Lieut.-Colonel Fletcher and the officers of the Royal Engineers to draw your Lordship's attention to the ability and diligence with which they have executed the works by which these positions have been strengthened to such a degree as to render any attack upon that line occupied by the allied army very doubtful, if not entirely hopeless. . . . We are indebted for these advantages to Lieut.-Colonel Fletcher and the officers of the Royal Engineers, among whom I must particularly mention Captain Chapman, who has given me great assistance upon various occasions."

The following is a complete list of the Engineers who from first to last were engaged in the construction of the lines :—Lieutenant-Colonel R. Fletcher; Captains J. T. Jones, J. Squire, G. Ross, S. Dickenson, E. Mulcaster, J. Williams, W. C. Holloway, S. R. Chapman, and H. Goldfinch; Lieutenants S. Trench, W. Forster, A. Thomson, F. Stanway, W. Reid, P. Wright, Rice Jones, J. Hulme, A. Tapp, and R. Piper.

* Conolly's "Royal Sappers and Miners," vol. i. pp. 170, 171.

The Destruction of Fort Concepcion.

The French had attempted to destroy this fort when evacuating it in 1808, and it had remained from that time with its breaches very partially and roughly patched up by the Spaniards. Lord Wellington sent Captain Burgoyne, in the month of May, 1810, to repair the fort as far as possible, so as to render it tenable. It was in charge of Brigadier-General Cox, the Governor of Almeida, being distant only a few miles from that fortress. Burgoyne set to work as promptly as possible to restore the masonry, and by stockading and other measures to increase its powers of defence. Meanwhile Lord Wellington foresaw the probability that he would have to retire, and sent fresh instructions that whilst continuing the work of restoration, the Engineers were at the same time to establish mines in such positions as would ensure the complete demolition of the fort and outworks. This was done, and for some time everything was held in readiness. On July 17th Colonel Fletcher wrote as follows to Burgoyne:—

"Sir,—I have this morning received your letter dated yesterday. I have mentioned the contents of it to the commander-in-chief, who desires that you will retire with the cavalry, having previously destroyed Fort Concepcion and its outworks as far as may be in your power. His Lordship does not think it necessary to complete any more mines than you have already prepared."

On the 21st Captain Burgoyne destroyed the fort, and thus describes the result:—

"Immediately it was ascertained that the French were in sufficient force to push our people back, the mines were lighted in the fort. Captain Mulcaster, of the Engineers, went up to warn me to light them, but it was already done. The dragoons I sent down to give every one they met notice neglected to tell him, and he was going up the ramparts to look for me when, smelling powder strong, he looked into one of the passages, and saw the portfire burning. Of course he made off as fast as he could, and went down to the cavalry, who were skirmishing near Aldea do Bispo. When he got down there the mines exploded, and he observed that those on that side took the desired effect. From Val de la Mula I could see that another side was also attended with success, as well as those in the outworks and detached redoubts. At the end of the saucisson three portfires were attached in lengths, the ends being cut off slanting, and then tied together; it was calculated these would give half an hour's law after being lighted, which they all did or very near it. The one lighted last, however, exploded first by some minutes. There were from 90 to 100 barrels of powder (Portuguese of 64 lbs. each only) in each ravelin, divided in the two casemates between the flank and face, and they destroyed each ravelin all but a very small bit at the salient angle. In the outer redoubt, which was large and high, the powder, 100 Portuguese barrels, were lodged in two small casemates,

one at each angle of the front, and destroyed the whole front and part of the sides. In the middle small quadrangular fort sixty Portuguese barrels were placed in one angle on the wooden floor dividing the casemate, and apparently cut the fort diagonally in two, throwing down the half where the powder was lodged. In the flanks were moderate breaches, and in the face the wall opened, and the top tumbled down, making a good breach."

Blockade of Cadiz and Battle of Barrossa.

Whilst Massena was being foiled in front of the lines of Torres Vedras, a somewhat similar operation was being carried on at Cadiz.

The passage of the Sierra Morena by the French on January 20th, 1810, had led to the capture of Seville on February 1st, and the subsequent fall of all the important towns in the southern provinces of Spain, with the sole exception of Cadiz. The Duke of Albrequerque, with a promptitude most unusual for a Spanish general, had no sooner heard of the French invasion than he at once pushed forward with a division of 8,000 men, and threw himself into the Isla de Leon, which he reached on February 4th, having marched a distance of 250 miles in nine days. He arrived only just in time to barricade the bridge of Zuazo over the San Pedro, and to drive back the advanced guard of Marshal Victor's force, which was hurrying forward to seize the island and town. Lord Wellington upon this sent a brigade under Sir W. Stewart to aid him in the defence, and a month afterwards General Sir T. Graham, with a force of 5,000 men, landed there from England, and took command of the garrison. Captains J. F. Birch, C. Lefebure, G. Landmann; Second Captain W. Nicholas; and Lieutenants J. N. Wells, T. H. Pitts, T. Roberts, J. Longley, H. D. Jones; and Second Lieutenant W. R. Ord were with this Division.

The Isla de Leon forms a triangle, the base of which is separated from the main land by a stream called the San Pedro, some eight miles in length. At the apex of the triangle runs a narrow tongue of land projecting some four miles into the sea, at the extremity of which is the town of Cadiz, cut off and defended by a single bastioned front on the land side. Its escarps on all the other sides are washed by the sea.

Graham promptly set his Engineers to work to throw up a line of defensive positions behind the San Pedro for the protection of the island; the dockyard of Caraccas, on the other side of the stream, being included as an advanced post. He also occupied Fort Matagorda, on the tongue of land forming the eastern side of the outer port, although it had been most injudiciously dismantled some time previously.

Marshal Soult, on his arrival, finding it beyond his power to force the lines, invested the island with his blockading force, covering his position with a series of earthworks, which stretched from the sea to the head of the inner port. He then advanced to the attack of Matagorda. Feeble as its strength was he did not succeed in overpowering it until April 23rd, when the place, which had become quite untenable, was abandoned by order of Sir T. Graham. At the very close of the defence Major Lefebure, the C.R.E., had his head taken off by a round shot whilst inspecting the enemy's works from over the crest of the parapet. He was succeeded in the command by Captain Birch.

Captain Burgoyne makes the following allusion in his journal to the death of Major Lefebure:—

"May 18th, 1810. By a note from Nicholas, at Cadiz, it appears they have not yet done much; there is so much ceremony and form with the Spaniards, who do not show a great desire to assist them. Poor Lefebure was the last man in Fort Matagorda, and was in the act of preparing the mine to blow up what remained of it, when a cannon shot struck his chest.

"June 15th. Birch lies very ill of the Walcheren fever at Cadiz. Landmann is also laid up there. Nicholas is consequently the senior Engineer there officiating. The most advanced of our batteries there is 1,600 yards on the road to Seville beyond the bridge over the Rio de San Pedro. The Engineers are employed in forming a chain of redoubts to cover La Isla."

During the course of the year the Engineer roster was increased by the arrival of the following officers:—Second Captain C. F. Smith; Lieutenants J. Vetch, W. D. Smith; Second Lieutenants J. S. Macaulay and J. Birch.

The lines of San Pedro, when completed, consisted of fifteen

closed redoubts, besides eight other works on dominant points, 175 guns being mounted in them.

The blockade having been maintained rigidly throughout the year, and there being no signs of withdrawal, an attempt was made on the part of the allies early in 1811 to raise it by an attack in rear on the French, it being known that at this time their strength did not exceed 12,000 men. The relieving force was to be conveyed by water to Tarifa, whence it could march on the flank of the enemy by way of Conil, Barrossa, and Bermeja. It was there to be joined by the remainder of the garrison under General Zayas, who was to cross the San Pedro on a bridge to be thrown over it close to the sea.

The troops having disembarked at Tarifa after much difficulty and delay, owing to the stormy weather, marched forward, the Spaniards in the van and the British closing the rear, intending to unite at Conil and make a joint attack from there. General Zayas, having learnt that the force was on its road, carried out his share of the programme with complete success. The bridge was constructed and held against a bold attack of the enemy. The commander-in-chief, General La Peña, captured one of the flank positions of the French and effected a connection with Zayas. He then sent a request to Graham to push forward as rapidly as possible with the British to complete the victory. The despatch was received on the morning of March 5th, at Barrossa, where Graham's force had just arrived, after a most fatiguing march of sixteen hours. In spite of the exhaustion of his men he determined to hurry on, and gave orders for an immediate advance. During the march, and whilst his rear guard was still on the heights of Barrossa, a French force marching in two divisions was discovered on the right flank. The following description of the battle that ensued is from the pen of Lieutenant Pitts, who, with six other Engineers, was with the army :—

"The head of the British column was about a mile in the wood, and its rear just entered, when an officer rode up to General Graham and reported that the French were coming out of the wood, about a mile to our right, in very superior force. The British immediately faced about, and every exertion was made to get out of the wood. As soon as this was done, the troops were formed as quick as possible, the cavalry having already begun to skirmish with the enemy; but our brave fellows suffered dreadfully before our formation could be completed, in fact, it never was so properly. The French were now in complete possession of the hill. The Spanish troops who had been left ran away like lamplighters, artillery and all.* The British battalion, under Colonel Brown, effected its retreat,

* A Spanish battalion with some artillery, and a British battalion, had been left as a rear guard to cover the march.

and joined the British army at the skirts of the wood. Nothing was to be done but to drive the enemy from the position, and this was done, and done by soldiers fighting against superior numbers, under every disadvantage possible to occur. I know very little of the general plan of the action; it was occupation enough to *push forward*. The allied army was saved by the exertions of our brave fellows. All distinguished themselves. My friends the Portuguese fought like heroes; they were the first engaged, and the French have reason to remember them. While Portugal possesses such stuff as this, every hope may be indulged. The French behaved uncommonly well, and have suffered dreadfully; but our bayonets wheeled them to the right about. They would not have stood had our lads been fresh. Our victory must have been the ruination of the French army. Our fellows were so tired that they could not get at them. Every now and then some dozen or two of the strongest pushed and got a dig at them. The French moved off in the most regular order, and at a steady pace, owing to our men actually wanting strength. The action was short; but perhaps there never was so sharp a one in the annals of the British army. We have suffered dreadfully. The Guards behaved astonishingly; but it is impossible to particularize. A charge made by a squadron of the hussars attracted the attention of all. The number of killed and wounded we don't yet know. An eagle (two were taken, but the fellow who had it flung it away in order to fight on, and it was lost) and six pieces of cannon are the trophies of the day. Birch, Nicholas, Wells, Vetch, Smith, Macaulay, and myself, were with the army. The General rode up to Birch and Nicholas after the action and took one in each hand, thanked them in the highest terms, and said, 'You are fine fellows at work as Engineers, you are fine fellows in the field, and I am more in your debt than anybody's.'" *

Captain Nicholas also wrote a very similar account addressed to Captain Burgoyne. After describing the arrangements for recovering the hill by a charge of the Guards, 87th, and 28th, he continues :—

"The French for some time waited for us in line, firing, but soon turned; the Guards and 87th had their bayonets into their backs. The day was now ours; the guns advanced some hundred yards, and played on them retreating. The German hussars charged the French cavalry on our right and beat them. Not a Spaniard was to be seen; they entirely deserted us, at least they never showed themselves during the action. We were unable to pursue, so fatigued were the men. Everybody believes we were betrayed by the Spanish Generals, La Peña and Lacy. The French are supposed to have had 8,000 men. Never did troops form under such disadvantages of ground and fire; never was a victory more decided. Every part of the line was engaged. We took six guns, one eagle, one general of division; two generals killed; 1,200 French lay on the field, and we have 300 of their wounded. We have about 240 killed and 1,000

* From Lieutenant (afterwards Captain) Pitts' private letters to his father.

wounded. . . . Birch and myself were thanked on the field for our assistance. . . ."

There were present at this battle a party of fifty R.M. Artificers, with Sub-Lieutenant Davie, the whole under the command of Captain Birch. They were placed at the head of the column to remove obstructions, and generally to serve as pioneers. During the action Sergeant Cameron led a section of seven men to the charge. Their blue uniform being very conspicuous amongst the red coats, they soon lost three of their number, and Sir J. Graham ordered the instant withdrawal of the party, observing that he might want them for other work. The sergeant was nearly tried by court-martial for leading his men into action without orders, but his bravery saved him.*

In spite of the victory the object of the expedition failed, and the British once more retired within their lines at La Isla.

We get several amusing glimpses of the Corps' gossip of the day in Pitts' letters:—

"Isla de Leon, April 19th, 1810.

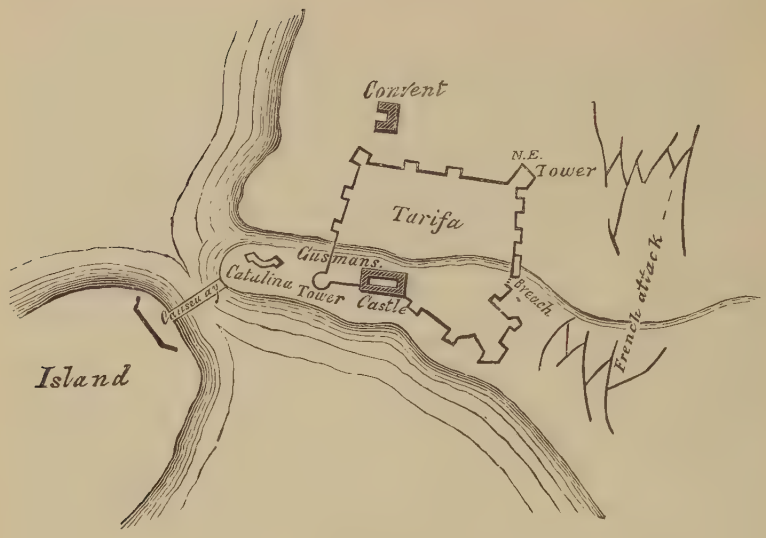
"If the Board of Ordnance had any generosity in them they would give Morse, Mann, and Twiss a good pension, and let them retire. If their length of service does not entitle them to it, I do not know who is entitled. I understand that Lord Mulgrave† intends to give us our half battalion as soon as there are Cadets in the Academy. It will make every difference to me whether it comes now or twelve months hence. The island gets rather a bore, though I had rather be here at present than in Portugal. They are all down at the lines‡ except Captains Fletcher and Jones, and Lieutenant Jones. Captain Felix Smith says he is going to England; he has been sick ever since he first joined here. Birch, you will see, is made a Major, which is *something* though a Lieutenant-Colonelcy would not have *half rewarded* his services."

The blockade of Cadiz was not raised until after the battle of Salamanca, in July, 1812.

The defence of Tarifa was so essentially the work of an Engineer, who carried it to a successful issue in spite of all the obstacles placed in his way by the supineness and obstinacy of his superior officer, that it merits some detail.

Tarifa was a small town at the southernmost point of Spain, in the immediate vicinity of Gibraltar, combining with the post of Ceuta on the opposite shore to command the entrance into the Mediterranean. It was encircled by a wall flanked with towers, but without any ditch, and of so slender a construction as to be

* Conolly's "History of the Royal Sappers and Miners," vol. i. p. 176.
† The Master-General of the Ordnance.
‡ Torres Vedras.



THE DEFENCE OF TARIFA.

incapable of resisting even field artillery. The bed of a torrent passed through the town; this was dry in ordinary times, but liable to sudden rushes of water during heavy rains. On the eastern side the entry of the torrent into the town was covered by a tower with portcullis, in front of which the bed of the stream had been further protected by palisades. On the south-west were two structures of more importance, called the castle, and the tower of Gusman. Beyond these a causeway connected the town with a small island of some 2,000 yards perimeter, the sides of which were so rugged and perpendicular that access could only be obtained from the causeway. This was covered on the island side by an unfinished intrenchment and battery. On the strip of land between the town and causeway was a sandhill, occupied by a small fieldwork containing one gun, and called Catalina. On the north-west was a convent, which had been converted into a fortified outpost, and was defended by 200 men.

The garrison was made up partly of a body of 1,200 men from the force at Cadiz, under the command of Colonel Skerrett, and partly of 400 men detached by General Campbell, the Governor of Gibraltar, who were under Major King. To these were added 700 Spaniards under General Copons. The Engineers present were Captains C. F. Smith and H. Vavasour, Lieutenants Longley,

Burney, and J. Birch. The besieging force consisted of about 8,000 men under General Laval.

The town seemed to a casual observer almost incapable of defence against a serious attack. It was commanded at short range on the north-east by high ground, whilst the bed of the torrent on this side afforded shelter to an advancing column. Its walls were uncovered and worthless against artillery, and the resources of the garrison most meagre. In the opinion of many the attempt to hold the place seemed foolhardy in the extreme, and even those who were not prepared to recommend its complete abandonment were inclined to limit the defence to the occupation of the island.

The keen eye of Smith had, however, perceived that the formation of the ground within the enceinte was favourable for a determined and protracted resistance, if only the enemy could be induced to attack at a particular point. This, curiously enough, was on that very eastern side which seemed to afford so much advantage to the besieger. True it would be impossible to prevent the speedy formation of a breach in the slender wall, but the sudden drop of the ground within, and the sloping sides of the torrent bed, afforded great facilities for interior retrenchments which would render the assault a most hazardous operation.

On December 19th the enemy drove in the advanced posts of the garrison, and reconnoitred the place with a view to selecting their point of attack. All fell out as Smith had hoped and anticipated. Seeing the apparent advantages of the high ground and hollow way on the east front, they opened their trenches there on the night of the 22nd, and made their advances steadily under the fire of the garrison. Their batteries were finished and armed so as to open fire at daybreak on the 29th. The guns used were sixteen-pounders, and the result of a few hours' fire was that the old wall fell down in masses, and a gaping breach was soon visible. Skerrett thereupon called a council of war, at which he proposed to abandon the defence, and embark the garrison on board the transports anchored in the roadstead. Smith steadfastly opposed this proposition, and in this he was supported by Major King, who declared his intention of continuing the resistance with the Gibraltar contingent alone, if he were abandoned by Skerrett. He at once communicated with General Campbell, informing him of the turn affairs were taking. That officer, who fully realized the importance of holding the place, and who had implicit confidence in the judgment of Smith and King, checkmated Skerrett by ordering the immediate return of the transports to Gibraltar, forbidding their commanders to embark a single soldier.

This step, by which his retreat was cut off, prevented any further efforts on the part of Skerrett to thwart Smith in his project for a

protracted defence. Every preparation had, indeed, been made against the impending assault. Smith had early foreseen the point likely to be breached, and had taken his measures accordingly. Behind the opening in the wall, the depth into the street was fourteen feet sheer drop. Here he had constructed every kind of obstacle. The houses were all loopholed and garrisoned, retrenchments were formed to enable every inch of ground to be disputed, whilst the Castle and the tower of Gusman were formed into a keep, to be held after the town itself had fallen. On both of the nights of the 29th and 30th, the foot of the breach was cleared of *débris* in spite of a heavy fire of grape, which was kept up from the besiegers' batteries.

On the night of the 30th a very heavy fall of rain brought down the torrent with such force that the palisades were swept away, the portcullis bent inwards, and the defences behind the breach seriously injured. The calamity only made the garrison redouble their efforts. Urged on by Smith's persistent energy, the damage was promptly repaired as soon as the rush of water had subsided, and by daybreak all were at their posts, awaiting the onset of the enemy, which they felt sure would be no longer delayed. As soon as it was light, a column of French grenadiers wound its way along the bed of the torrent, now once more dry. They did not at first attempt the breach, but dashed at the portcullis. They had evidently ascertained that the rush of water had injured it, and they hoped to be able, with the means at their disposal, to force an entrance past it. In this, however, they were grievously mistaken. The portcullis held firm, and the 87th Regiment, posted behind it, received them with a withering volley, which crushed the head of the column. Thus checked, and suffering under the unceasing fire which was poured on them, they soon lost their energy; the bed of the torrent became choked with the dead and wounded, and the survivors, spreading to their left, strove to penetrate by the breach. Here, however, they met with an equally steadfast resistance, and soon became so much disorganized that it was a comparatively easy matter to hold them at bay. All this time a field-piece, mounted on the north-eastern tower, poured showers of grape into their midst. After a brief interval of indecision, their leaders having fallen and their ranks being cruelly thinned, they once more betook themselves to the shelter of the torrent bed, and returned, discomfited and utterly cowed, to their camp.

This was the only attempt at an assault which was made. The weather became extremely inclement; the severe rain greatly damaged their batteries and trenches, and rendered the supply of the besiegers very difficult. On the night of January 4th, 1812,

they were heard making preparations for retreat. On the following morning, therefore, the British assumed the offensive. Sallying forth from the convent in considerable force, they drove the French from their batteries and trenches, and compelled them to make a hurried retreat, leaving everything in the hands of their assailants.

In this short siege the French lost no less than 1,000 men, whilst the casualties of the allies were only 150. Lieutenant Longley, R.E., was unfortunately amongst the killed.

By general consent the chief merit of this defence has been awarded to Captain C. F. Smith. Sir W. Napier, in his history, says :—

"Tarifa was worth the efforts made for its defence, and, setting aside the courage and devotion of the troops, without which nothing could have been effected, the merit chiefly appertains to Sir Charles Smith, the Captain of Engineers. That officer's vigour and capacity overmatched the enemy's strength without, and the weakness and cajolement of those who did not wish to defend it within. Skerrett could not measure a talent above his own mark, and though he yielded to Smith's energy, he did so with avowed reluctance. . . . During the siege the Engineers' works were constantly impeded by him ; he would call off the labourers to prepare posts of retreat. . . . To the British Engineer, therefore, belongs the praise of this splendid action. He perceived all the resources of the place, and with equal firmness and talent developed them, notwithstanding the opposition of his superiors; he induced the enemy, whose attack should have embraced the suburbs and the north-west salient angle of the place, to open his trenches on the east, where, under the appearance of weakness, was concentrated all strength ; finally, he repressed despondency where he failed to infuse confidence."*

The Siege of Ciudad Rodrigo.

During the summer of 1810 the French, under Marshal Ney, succeeded in capturing the Spanish frontier fortress of Ciudad Rodrigo, after a siege of about a month. The defence had been very fairly maintained, and it was not until the counterscarp had been blown in, practicable breaches established, and the troops assembled for the assault, that the Governor, General Hervasti, made an honourable capitulation. This occurred on July 10th, 1810.

Later on, in the month of March, 1811, Marshal Mortier, in his turn, made himself master of the still more important fortress of Badajoz, under circumstances by no means so creditable to the defenders. The occupation of these two strong places on the frontier of Portugal rendered any advance on the part of the

* Napier's "War in the Peninsula," vol. iv. pp. 59, 60.

British, if not impracticable, at least extremely hazardous. Lord Wellington, therefore, as soon as the retreat of Marshal Massena had released him from the necessity of acting purely on the defensive, turned his attention and thoughts towards their recovery. After two unsuccessful attacks had been made upon Badajoz, which will be described further on,* he determined to make a vigorous attempt against Ciudad Rodrigo, and for this purpose cautiously and secretly began his preparations for its siege.

Captain Burgoyne, who at the time was attached to General Picton's division (the third), had received orders, as far back as July 28th, to train 200 men of the division in the art of sapping and other rough field-work operations, which he accomplished in a very satisfactory manner considering the difficulties he had to contend with. He thus alludes to the matter in a letter to his sister:—

"My principal business now is training 200 men of different regiments to the duties required in a siege, which, to our disgrace and misfortune, we have no regular establishment equal to, notwithstanding the repeated experience of the absolute necessity of such a corps to act under the Engineers in a campaign. For want of such an establishment we are frequently led to the loss of valuable officers, and very undeserved discredit. The undertaking I am set about will be only temporary, and will supply very imperfectly this deficiency."

He continues thus in his journal—

"December 18th. It appears to be the intention of Lord Wellington to besiege Ciudad Rodrigo. By the general orders of this day the regiments of the 1st, 3rd, 4th, Light Divisions, and General Pack's Portuguese Brigade, are ordered to make fascines, gabions, and pickets of prescribed dimensions at the cantonments of the several regiments. This arrangement appears bad; as the parties will be so dispersed it will be impossible to superintend them well. The distance to Ciudad Rodrigo is in many instances five leagues, and in some as much as seven; in many places the materials are bad or scarce, whereas, about Espeja and Campillo, within two leagues of good road, is plenty of stuff to employ the whole.

"December 30th. . . . . I am cutting planks for platforms at Puebla d'Azava. The number of gabions proposed to be made in the first instance was 2,500, of fascines 2,500, and of pickets 10,000. A bridge of trestles has been thrown across the Agueda by the staff corps.

"January 2nd, 1812. A fall of snow. All the cars that can be collected in the cantonments of the 3rd Division are ordered to be assembled at Gallegos and Las Agallas on the 5th inst., and reported to the

* It has been thought advisable to postpone the description of the two unsuccessful sieges of Badajoz till the next chapter, when all three sieges will be treated consecutively.

SKETCH OF THE FORTRESS OF CIUDAD RODRIGO.

The English lines are shewn ———
" French " " ////////
Nos 1 to 5 shew the sites of the Batteries.

officer of Engineers there. They go loaded with fascines and other siege stores. . . . .

"January 5th. . . . . The cars conveying gabions, fascines, &c., to Las Agallas from Lagiosa and Navas Frias cannot proceed from the badness of the roads, and were left in the road."

Ciudad Rodrigo is situated on the right bank of the river Agueda. Its enceinte consisted of a rampart, the escarp of which was over thirty feet in height. It was, however, of very old and faulty construction, and almost entirely unflanked. This line was surrounded on all sides, except that covered by the river, with a faussebraye, more or less broken into flanks, and having a glacis, but no covert way. The faussebraye, owing to its low relief and the natural fall of the ground, afforded but a poor cover to the main enceinte, and for the same reason was itself but imperfectly protected by its glacis.

The fortress, at the time of its siege by the British, was strengthened by the conversion into fortified outposts of the three convents of Santa Cruz on the western side, San Francisco on the north-east, and San Domingo on the south-east, these last two forming part of a suburb which had grown up at this point. On the north side are two hills, called respectively the Upper and the Lower Teson; the first, which is distant about six hundred yards from the enceinte, rises to a level that dominates over the parapet of the rampart. From it the escarp could be seen over the crest of the faussebraye for more than half of its height. The Lower Teson, which is only about 200 yards from the enceinte, has far less command. The French had occupied the Upper Teson with a redoubt of sufficient capacity to hold a fairly numerous garrison; this was flanked by a battery placed on the roof of the convent of San Francisco; it was also well protected by the artillery fire from the enceinte in its rear. Such was the place which Lord Wellington proposed to reduce by a rapid siege almost in face of the enemy.

On December 18th, 1811, Lieutenant De Salaberry received orders to join the army with a small detachment of eighteen Royal Military Artificers from amongst those employed in the lines of Torres Vedras. For the same purpose a company was embodied to become the Fifth Company of the Second Battalion. This was also formed from the men at the time engaged in maintaining the lines, and had its head-quarters at Alhambra. It marched forty-one strong for Ciudad Rodrigo on January 2nd, 1812, conveying a large assortment of intrenching tools to be used in the siege. The party encountered the most unfavourable weather, and the roads being very bad and much cut up, they could advance but slowly. Many of the mules succumbed from fatigue, and the men

had to carry their loads. After a toilsome march of seventeen days they arrived at Ciudad Rodrigo on the very night of the assault, but not in time to take any part in it.*

Orders had been confidentially given to Lieutenant Piper, R.E., to form a bridge at Abrantes, for which purpose an equipment containing twenty-four pontoons was placed under his charge. It had been intended to invest the fortress on January 6th, but owing to the severe snowstorms recorded by Burgoyne this was not effected till the 8th.

On the previous day, Lord Wellington, accompanied by his Commanding Engineer, Lieutenant-Colonel Fletcher, and other officers of his staff, made a close and careful reconnaissance of the place, and decided upon the plan of operations. This was to storm and capture the redoubt on the Upper Teson as a first step. As soon as this was accomplished, a lodgment was to be formed in its rear, and as quickly as possible developed into a parallel. Batteries were to be thrown up in its front, by means of which the defences of the place were to be ruined and its artillery overpowered. Under protection of the fire of these batteries the lines were to be pushed forward to the Lower Teson, on which the breaching batteries were to be established. The further stages of the siege were left for future consideration, as much depended upon the movements of the enemy and the time that could be allowed for the operation.

This scheme was in perfect accord with the views expressed by Burgoyne in the year 1809. Lieutenant-Colonel Fletcher had asked him for such observations generally on the defences as might occur to him. To this he replied by a report dated September 15th, 1809, in which, after describing the fortress, he continues:—

"The weakest side of the place, and one affording much more advantages to attack than any other, is the north, where at less than 300 yards is a small height opposite one angle of the place from whence the escarps may be perfectly breached. The rear of this height and approach to it are under cover, and at the back of it are others from whence the defences may be destroyed. It did not appear that much could be done in a short time to improve this part; there is no room within the work to form a retrenchment unless the cathedral church, which is immediately on this spot, were used as such, and the fall of the hill is such as not to allow of the escarp being covered under considerable time."

The weather was extremely cold and stormy. It was therefore decided that the four divisions composing the besieging force should remain cantoned in the surrounding villages. The duties of the

* Conolly, vol. i. p. 184.

siege were to be carried on by each in daily rotation, the relief taking place at noon. This arrangement, which was by no means favourable to the rapid prosecution of the attack or the due protection of the working parties, was rendered absolutely necessary by the fact that the army was utterly unprovided with proper camp equipage.

The names of the officers of Royal Engineers engaged in the siege are as follow:—

Lieutenant-Colonel Fletcher, Commanding Royal Engineer; Captains Burgoyne, Ross, Ellicombe, Macleod, Williams, Mulcaster, McCullogh, R. Jones, and John T. Jones (Brigade Major); Lieutenants Marshall, A. Thomson, De Salaberry, Skelton, Reid, Elliot, Lascelles, Wright, and Stanway (Adjutant). Twelve Line officers acted as Assistant Engineers. There were also attached to the department 18 non-commissioned officers and men of the Royal Military Artificers, and 180 men of the Third Division, who had during the previous few months received a slight training in sapping and other Engineer operations under Burgoyne; together with 20 miners and 60 carpenters, selected from the various divisions.

As the first step was to be the capture of the Teson redoubt, orders were issued for its assault on the night of the 8th, directly after the investment had been completed. As soon as it was dark a brigade was formed up under cover of the reverse slope of the hill. Two working parties were also paraded in rear—one of 400 men, to effect a lodgment on the crest of the hill, and the other of 300 men, to throw up the trench of approach from the rear. The assaulting column consisted of three companies of the 52nd Regiment, under the command of Lieutenant-Colonel Colborne, conducted by Lieutenant Thomson, R.E., and accompanied by a party of sappers carrying scaling ladders, fascines, &c. On arrival at the redoubt Thomson discovered that the palisades which had been constructed in the ditch were so fixed that their points were only three feet from the crest of the counterscarp. With the aid of his fascines he was therefore enabled to form a bridge by which the stormers could pass over the palisades and jump into the ditch on their inner side. The escarp not being revetted they carried the work with a rush. At the same time, another party had passed round to the rear, where there was no ditch, and had forced their way in over the gate. The struggle was very short, the garrison being taken completely by surprise. They had never contemplated such prompt action on the part of the besiegers, and had made no special arrangements for defence. In a few minutes the redoubt was in the hands of the British, such of the garrison as had not been bayoneted falling prisoners, to the number of fifty. The gate was at once destroyed, and the rear thrown open by making

breaches in the enclosure wall, so as to prevent its possible reoccupation by the enemy. At the same time, the lodgment and trench of approach were begun, and before daylight were three feet deep and four feet wide throughout.

On the following night the whole of the first parallel, six hundred yards long, was opened up, as well as three batteries in its front. Whilst superintending this work Captain Ross, the director on duty, was killed by a grape shot.

The construction of these batteries was steadily and energetically pushed forward in the face of considerable difficulties. Being under fire of the powerful artillery of the fortress, at a distance of less than 600 yards, it was absolutely necessary that the parapets should have a minimum thickness of eighteen feet. In order to provide the mass of earth required for such a profile, it was determined to make the batteries half sunken, part of the earth being taken from the ditch in front, and part by lowering the terreplein in rear. This was rendered the more advisable, because the soil on the crest of the hill was of no great depth, and the rock soon reached. The artillery fire of the place, however, became so hot and so accurate, that it was impossible to continue the excavation of the ditches. Shells were constantly dropping into them, and exploding amongst the party employed there. After many casualties had been thus occasioned the men were retired, and cover had to be obtained by extending the rear excavation. Another great impediment was caused by the salvoes of shells fired by the garrison, which, bedding themselves in the earthwork, and exploding more or less simultaneously, acted like small mines, frequently blowing away large masses of parapet, and undoing in a moment the work of hours. In spite of all these difficulties the Engineers succeeded in pushing forward, and on the night of the 12th the emplacements were ready for the carpenters, who began to lay the gun platforms.

On this day Lord Wellington received information that Marshal Marmont was taking steps for relieving the town. He therefore consulted with Lieutenant-Colonel Fletcher as to whether the siege might not be expedited by breaching the escarps from the batteries then nearly ready, without waiting for those to be constructed on the Lower Teson. Fletcher was of opinion that this was feasible; it was therefore decided that instead of confining their operation to the crushing of the artillery of the place they should commence at once to batter, and that if Marmont advanced the place should be assaulted without delay, as soon as the breach was in any way practicable.

On the night of the 13th the convent of Santa Cruz was taken by escalade, and a lodgment formed in it; this step protected the right of the attack, which had been much galled by the fire from the

convent. On the same night the second parallel, with its approaches, was begun by means of flying sap, and the batteries in rear were armed.

On the morning of the 14th, about 11 a.m., a vigorous sortie was made by the garrison with a force of 500 men. The governor had posted an officer on the steeple of the cathedral to watch the movements of the besiegers. The look-out had noticed that as soon as the relieving division was seen approaching the lines the guards and working parties about to be relieved were withdrawn from the trenches and massed in the rear in readiness to be marched off. The governor having his attention drawn to this act of carelessness determined to profit by it, and so timed his sortie that the column arrived in front of the trenches at a moment when they were almost entirely unprotected. The danger was imminent that the assailants would penetrate to the batteries and succeed in spiking the guns. This, however, was obviated by the bravery and promptitude of an Engineer officer, who collected as many of the workmen not belonging to the retiring division as he could get together, and manned the parapets, keeping up such a steady fire that the advance was checked sufficiently long to enable the relieving division to rush forward to the rescue. The column was driven back into the town, the damage done by them being confined to the overthrow of the gabions fixed on the previous night.*

The next few hours were devoted to the opening and revetting the embrasures of the batteries, to enable them to open fire. Whilst conducting this operation Lieutenant Skelton was cut in two by a cannon shot. The batteries opened at 4 p.m., but were not able to make much impression before night. As soon as it was dark the convent of San Francisco was escaladed by a party of the 40th Regiment. The French made but a feeble resistance, and abandoning the entire suburb, as well as the convent of San Domingo, retired into the town, leaving their artillery behind them.

The sap was pushed forward with great vigour during the night, and the second parallel much extended, all the damage done during the sortie being repaired. The enemy, on their side, kept up a very heavy fire of shot, shell, and musketry, causing many casualties; amongst others, Captain Mulcaster was wounded in the thigh with

* Jones, in his "Sieges in Spain," records this incident, but he does not name the officer. This would rather lead to the supposition that he himself was the person. If this be not so, it must have been one of the two Engineers brigaded together for work in the trenches who were on duty at the time. As we find that Lieutenant Skelton was killed almost immediately afterwards, we may assume that either he or Captain Mulcaster, who worked with him, was the officer in question.

a musket ball. They also threw a number of light balls to discover the working parties.

"Two or three bold men of the Engineer brigade were always in readiness to run up and extinguish the light balls as they fell, and generally succeeded in a few seconds in smothering them with filled sand bags or by shovelling earth over them. The garrison always directed their fire on the men whilst so occupied, which diverted it altogether from the working party, employed, perhaps, at a few yards distance from the ball to its right or left. Some casualties occurred to the men thus employed, but generally they had extinguished the light ball before a second discharge of artillery could be brought upon them.*

The three breaching batteries worked steadily throughout the 15th, and by evening the escarp of the main line, as well as that of the faussebraye, showed signs of a speedy collapse. It was therefore decided to throw up a new battery to the left and in advance of the others, to batter the wall of an exposed tower to the left of the principal breach as seen from the trenches. This was done, and fire was opened from it on the 18th. Meanwhile, the second parallel was extended so as to crown the ridge of the Lower Teson. As soon as the trench was finished it was lined with musketry to keep up a heavy fire on the breaches, which were rapidly becoming practicable. Whilst this work was being carried on, Lieutenant Marshall was wounded in the head with a musket ball.

On the 18th, a fifth small battery was thrown up on the extreme left of the second parallel; but as the assault was decided on before it could be completed, only a field gun and howitzer were run in during the night to keep up a galling fire on the breaches, and prevent any measures being taken for their defence.

On the afternoon of the 19th, Lord Wellington, having made a close reconnaissance of the ramparts, decided not to delay for any further advance, but to storm on that night. For this purpose he sat himself down on the reverse side of the trench and wrote in pencil his orders for the operation. The attack was begun a few minutes before 7 o'clock by a column composed of the 5th and 94th Regiments, guided by Major Sturgeon, of the Royal Staff Corps, and accompanied by a party of Sappers with axes and scaling ladders. The point selected for the attempt was that where the faussebraye terminated by being returned on to the main escarp. The column issuing from behind the convent of Santa Cruz was soon at the spot, and being apparently quite unexpected, found little difficulty in penetrating into the ditch and scaling the fausse-

* Jones's "Sieges in Spain," vol. i. note 11, page 367.

braye. From thence they found their way round to the main breach.

Meanwhile, a party of 150 Sappers, led by Captain Macleod and Lieutenant Thomson, advanced from the left of the second parallel carrying bags of hay. These they threw into the ditch at the foot of the counterscarp opposite the point of attack. The assaulting column, which was following close behind, jumped without hesitation on to the bags, and assembling in the ditch prepared to dash at the breach. The garrison had lodged there a number of shells and other combustibles, which, most fortunately for the assailants, they fired prematurely, so that their effect was exhausted without causing many casualties. As soon as a sufficient number of men had been got together, a vigorous rush was made. At this moment the men of the 5th and 94th Regiments, who had gained the terreplein of the faussebraye, came pouring along and joined in the attack. A desperate struggle ensued, the defenders making a most determined resistance. Crowning the breach, they poured a withering fire on the mass struggling up its rugged surface. The assailants would not, however, be denied, and in spite of all difficulties, carried the work. Here they found that retrenchments had been made across the rampart on either side. It became, therefore, necessary either to force these retrenchments, or to endeavour to descend the perpendicular revetment of the terreplein, which was sixteen feet in height, and protected at its base by crow's feet, chevaux de frise, and other obstacles.

Meanwhile a third assaulting column had moved out from behind the convent of San Francisco, and had, without much difficulty, carried the small breach made in the wall of the tower. The rampart being reached, and there being no interior defence, the column formed and made its way towards the great breach, where it took the retrenchment in rear. Further resistance was now manifestly hopeless, and the fortress fell into the hands of the British.

In leading the column to the main breach, Lieutenant Thomson was severely wounded, but no other casualties occurred amongst the Engineers. Captain Jones, however, had a very narrow escape, which is thus recorded in his Memoirs:—

"Immediately after the assault, Major Jones" (he was Brigade-Major at the time) "possessed himself of the governor's papers, and having delivered them personally to Lord Wellington, was ordered to make the tour of the works, to see what might be necessary to place them in a condition to resist any effort of Marshal Marmont's army to recover the place. In this peaceful occupation, and whilst congratulating himself on the safe and happy termination of his labours, he had nearly closed his career for ever. On approaching a spot where the rampart was very

narrow, and retained along its interior next the town by a high wall, he saw the earth suddenly tremble and open almost beneath his feet, accompanied by a rumbling sound, and in an instant perceived twelve or fifteen men soaring in the air directly up the street, as if propelled from a mortar at a low angle. These men were English deserters, who had concealed themselves in a small magazine under the rampart, the door of which opened through the interior retaining wall in the direct *alignment* of the street. These desperate men, on seeing an officer approach, deeming discovery and capture inevitable, and assured that an ignominious death would follow, had blown themselves up in the magazine, which being very thickly loaded over the arch, the explosion had first found vent through the door, and had shot the refugees up the street. Several fell to the ground still alive, but so sadly mutilated, distorted, and blackened, as to be painful to behold, and they could not possibly have been identified as Englishmen but for their uniforms, which the governor, by a wily though not humane policy, had caused all the deserters in the place to wear on the night of the assault, to render them desperate, as having only success or a halter presented to their choice."

The loss of the Engineers during the siege was two officers killed and five wounded, out of a total number of nineteen.

In Lord Wellington's despatch, announcing the capture of the town, he states—

"I likewise request your Lordships' attention to the conduct of Lieut.-Col. Fletcher, the Chief Engineer, and of Brigade Major Jones and the officers and men of the Royal Engineers. The ability with which these operations were carried on exceeds all praise."

The narrative of this siege cannot be better concluded than by appending extracts from a letter written by Captain Burgoyne to Captain Squire, on the subject, dated February 7th, 1812 :—

"I observed a long letter for you from Jones, which I suppose contains all the information requisite on the siege, but as I am not certain of the nature of it, I enclose the copy of the journal of the French Engineer. You remember, probably, what I told you on the making the gabions, fascines, &c. The consequence of that arrangement was that a very small proportion of those made were brought up, those that came were mostly very bad ones, and the gabions of that unwieldy size as to cause the greatest impediment and delay when we got within 200 or 300 yards of the place, that is, under good musketry fire, from the difficulty of getting the men to convey them, particularly at night, when they were most wanted. With respect to fascines, we did not use one during the whole business, except a few to walk on in the wet parts of the trenches. . . . There was a great want of arrangement in the bringing up the stores ; the fresh working parties were conducted to the engineer depôt, whether by day or night, and loaded with platforms, splinter proofs, sandbags, &c., while another part

conveyed their arms. These men with the stores would separate even the different parts of the same platform, and come in by ones and twos for an hour after, causing much delay and confusion in telling off the parties, and the stores constantly went wrong. . . . Our batteries, you will probably take notice, were very long constructing. I do think sinking the interior three feet is not the quickest way to make them, it is so long before you clear out the interior. British soldiers must be bad as working parties, compared with their enemies, probably from its not being made so much a point of duty and honour the officers attending to them, &c.; but it scarcely ever happens that we can complete works in the time laid down in the French authors. . . . Mulcaster, McCulloch, and Reid are getting on well, but of poor Thomson I fear there are little hopes, Doctor Gunning having declared that now his leg must be prepared for amputation."

CHAPTER XII.

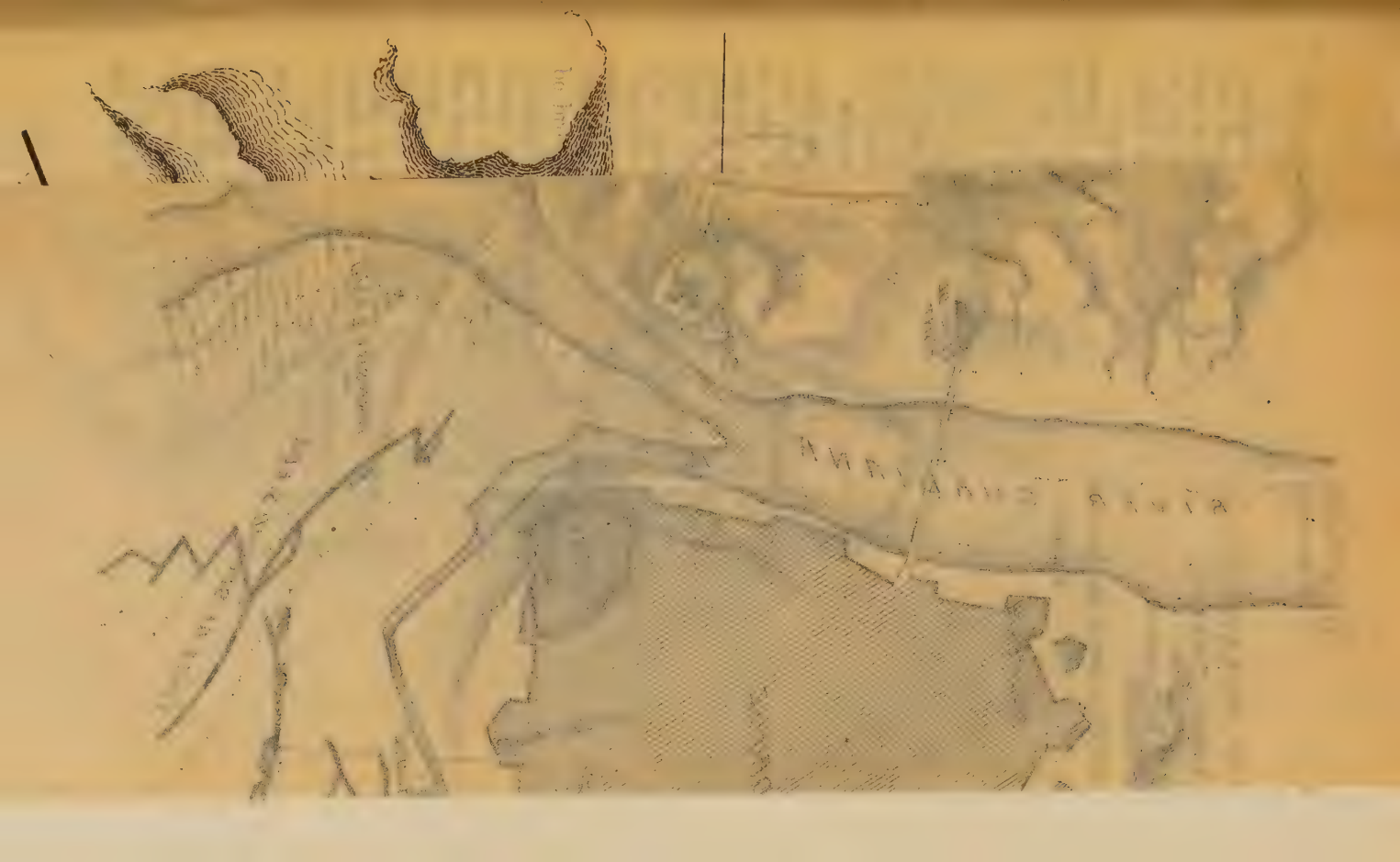
The Three Sieges of Badajoz—1811-1812.

Description of Badajoz—Project of Attack—Opening of the First Siege—Attack on Fort Christoval—Sortie of the Garrison—Raising of the Siege—Its Resumption after the Victory of Albuera—Deaths of Forster, Patten, and Hunt—Second Raising of the Siege—Cause of the Failure—The Third Siege—Sortie from the Town—Fletcher Wounded—Impediments by Bad Weather—Death of Mulcaster—Assault of Fort Picurina—Attempt to Destroy the Batardeau—Preparations for Storming—Escalade of the Castle—Failure of the Assault at the Breaches—Escalade of San Vincente Bastion—Capture of the Fortress—Losses of the Engineers—Descriptions of the Assault by Vetch, Pitts, and McCarthy—Lord Wellington's Despatches.

It has already been stated that previous to the attack on Ciudad Rodrigo, two unsuccessful attempts had been made against the fortress of Badajoz. It seems better to keep the description of the three sieges of this place together, although, as a matter of chronology, that of Ciudad Rodrigo was intercalated between the second and the third.

The town of Badajoz is situated on the left bank of the river Guadiana, at the point where the smaller stream, Rivillas, flows into it. The fortress consisted of an enceinte of eight bastions, starting from the north-west end of the town, and enclosing it round to the north-east. At this latter point stood the castle, on an elevated mass of ground, in the angle formed by the junction of the Guadiana and the Rivillas. The enceinte was covered by two outworks of some importance—the Pardaleras, a crown work of two bastioned fronts, imperfectly closed at the gorge, which was situated on the south-west; and the Picurina, a lunette on the south-east, to which may be added the smaller lunette of San Roque (called by Lord Wellington a ravelin), a work of much less importance, situated on the marshy ground to the north of the Picurina, and acting as a *tête-de-pont* to the bridge over the Rivillas. On the north side of the Guadiana stood Fort Christoval, a closed work of four faces, with a ravelin on the outward front. A bridge across the Guadiana led into the town, covered by a *tête-de-pont* to the west of Fort Christoval.

Marshal Beresford having retaken Olivença on April 15th, 1811, directed his attention to the more important fortress of



Badajoz. He had at the time under his command three divisions, two English and one Portuguese. In Burgoyne's journal, under date April 23rd, is the following entry concerning the movements of officers of the Royal Engineers, which refers to the contemplated operations against Badajoz:—

"Captains By, Macleod, and Boteler, Lieutenants Marshall, Melville, Pringle, and Wright, Engineers, and two draughtsmen, are come out. The three captains as well as Dickinson are ordered up to Elvas, as also all the officers of Engineers who were on their road for head-quarters. It is expected Badajoz will be besieged. Birch, Commanding Engineer at Cadiz, is made Major at the recommendation of General Graham in his despatches on the action of Barossa. Thomson is also ordered up to Elvas; and Mulcaster is to proceed there the moment a siege is decided on. Lord Wellington and the head-quarters are gone to reconnoitre Badajoz to decide on the practicability of besieging it. They write from the neighbourhood of Almeida that the destruction of Fort Concepcion was very complete."

Whilst Beresford was taking the necessary steps to secure his communications across the Guadiana, Lord Wellington joined him, and the two commanders decided that an attempt should be made to take the place by a hasty siege. They found that the Castle, which (as has been said) was placed on steep and commanding ground, the base being washed by the Guadiana and Rivillas, consisted merely of a wall built on the crest of the height. It was also observed that the interior of the Castle could be swept from Fort Christoval. The project therefore was to capture that work, and immediately afterwards batter the wall of the Castle. The assault of the latter would be greatly aided by the fire which could be brought against any attempt to defend the breach. A daring reconnaissance made by Engineer officers to the very foot of the Castle wall proved that the hill on which it was placed offered no great difficulties in the ascent. This point once in the hands of the besiegers, the resistance of the remainder of the fortress must cease. The scheme being thus decided on, Lord Wellington left the prosecution of the siege to Marshal Beresford. Considerable delay occurred before the bridge across the Guadiana was established, the first attempt having failed owing to a sudden rise of the river, and it was not until May 8th that ground was broken.

The Engineers employed at the siege were Lieutenant-Colonel Fletcher, Commanding Engineer; Captains Squire, Patton, Ross, By, Macleod, Boteler, Mulcaster, Dickinson, and John T. Jones (Brigade Major); Lieutenants Emmett, Forster, Stanway, Reid, Hunt, Thomson, Melville, Wright, and Rice Jones (Adjutant), with Captains Wedekind and Meineke of the Hanoverian Engineers.

Twelve officers of the line volunteered as assistant Engineers, and the force of Sappers consisted of twenty-seven non-commis-

sioned officers and men of the Royal Military Artificers, with eighty-four carpenters and miners drawn from the infantry.

In order to conceal the real point of attack on Fort Christoval, trenches were opened at the same time as a feint against Forts Pardaleras and Picurina. In front of Christoval a parallel and battery were begun at a distance of 450 yards from the fort, and within twenty-four hours Captains Ross and Boteler and Lieutenant Melville had all been wounded. Work progressed very slowly owing to the rocky nature of the ground, there being barely a foot of earth. For this reason cover could not be obtained for the guard of the trenches, and they had to be retired behind the reverse slope of the hill. The garrison perceiving this, made a daring sortie on the morning of the 10th, and for a few moments the battery and trench were in their hands. The guard, however, speedily advanced and drove them back, but, as Lord Wellington reported in his despatch to the Earl of Liverpool—

"I am concerned to add that our loss on this occasion was very severe, owing to the gallant but imprudent advance of the troops quite to the glacis of San Christoval, and to a situation in which they were exposed to the fire of musketry and grape from that outwork, as well as from the body of the place."

In this unfortunate affair Lieutenant Melville was killed and Lieutenant Reid wounded.

Burgoyne, in his description of this siege (of which he was not an eye-witness), writes—

"On the 10th the enemy made a vigorous sortie and a number of lives were lost, but they were repulsed without doing any mischief, though they had possession of our works. Lieutenant Reid, of the Engineers, was officer on duty in the trenches at the time, formed the pickets and working party, and charged the enemy. Colonel Harcourt, 40th Regiment, who was also wounded, wrote a handsome letter in his praise to Captain Squire."

At daylight on the 11th the battery opened, but, owing to the inexperience of the Portuguese gunners, was not very well served, and in the course of the day it was silenced through the heavy fire brought on it, only one howitzer remaining serviceable. It was impossible to reopen this battery until more guns could be brought across the river. Meanwhile, a second battery was commenced, in order to pour a greater amount of fire on the place. Another was also thrown up in prolongation of the bridge across the Guadiana, which had been used by the defenders during their sortie. In carrying out this work, Captain Dickinson had his head taken off by a cannon shot. Ground was opened against the Castle on the night of May 12th, but before morning orders were

received from Lord Wellington to raise the siege,—Marshal Soult having made such a threatening movement that a concentration of the British forces was necessary to oppose him. During the few days that trenches were open the Engineers lost two officers killed and three wounded.

There can be no doubt that this siege was undertaken with a complete misconception of the power of the fortress. Men and materials were alike wanting for its due prosecution, the weakness in artillery being pre-eminently fatal. The men under the superintendence of the Engineers were utterly uninstructed in sapping and the construction of fieldworks, the most simple details being left to the personal direction of the officers, who alone had the slightest knowledge of the subject. Hence the comparatively numerous casualties amongst them.

Marshal Beresford having gained a complete, though bloody, victory over Marshal Soult at Albuera on May 16th, and the French having in consequence retired without communicating with the garrison, the siege was resumed by a partial investment of the fortress on the 19th, which was completed on the 25th. Lord Wellington, who had by his victory at Fuentes d'Onor on May 5th compelled Marshal Massena to retreat, was able to spare two additional divisions for the siege, and he determined to take command of the operation himself. The necessity for rapid action was as great as ever. The French armies, though beaten, were still far more numerous than the allies, and it was certain that they would again co-operate to raise the siege unless it were prosecuted with the utmost rapidity. Lord Wellington therefore decided upon following the same scheme as was laid down on the former occasion, but, increasing his means of attack, to open his trenches against the Castle and San Christoval simultaneously. The following Engineer officers were detailed for the service:—Lieutenant-Colonel Fletcher, Commanding Royal Engineer; Captains Squire and Burgoyne,* who were respectively directors of the attacks on Christoval and the Castle. Captains

* Captain Burgoyne wrote a letter to his friend Lord Derby at this time, of which the following are extracts:—

"My dear Lord Derby, "Lisbon, May 29th, 1811.

". . . . I have at length obtained an order to assist at the second siege of Badajoz about to be undertaken, and cross the Tagus this day on my way up there. Marshal Beresford has not gained much credit in the army by his late operations. . . . . At the siege of Badajoz, by his acting contrary to the advice of his Engineers and of every one else, he was the cause of a great number of lives being lost, and on the fifth day of open trenches our finding ourselves commencing the siege just where we ought to have been on the first. . . . . I hope to arrive before they commence the siege of Badajoz."

Patton, Ross, By, Macleod, Mulcaster, and J. T. Jones (Brigade Major); Lieutenants A. Thomson, Emmett, Forster, Stanway, Reid, Wright, Hunt, Rice Jones, Marshall, and Hulme, with Captains Wedekind and Meineke, of the Hanoverian Engineers, also eleven officers of the line as Assistant Engineers. Under them were twenty-five Royal Military Artificers, with 96 artificers and 169 workmen, drawn from the several divisions of the line.

On the night of May 30th, trenches were opened both in front of the Castle and Fort Christoval, at the latter place four batteries with a connecting parallel being begun. Of these, one was intended to enfilade the defences of the Castle, one to breach an exposed flank at Christoval, another to ruin its parapets and defences, the fourth being to enfilade the bridge across the Guadiana. On the side of the Castle attack two batteries were also begun, to which a few days later a third was added, all being intended to form a breach in the wall, which was of poor construction and completely exposed. The batteries at both attacks opened fire on the morning of June 3rd, and before evening the outer face of the Castle wall had been thrown down, leaving only a bank of clay behind it. The breaching operations at Christoval were somewhat slower, but on the 5th it became apparent that the flank was much injured, and in the course of that night Lieutenant Forster, R.E., the officer appointed to guide the storming party, made a careful inspection of the breach, which he reported practicable. Fire was kept up steadily all day on the 6th, and at midnight a storming party of 180 men was led to the spot by Forster. Here, however, he found that in the interval between dusk and midnight the garrison had succeeded in removing so much of the *débris* from the foot of the breach that it was no longer practicable. Several attempts were made to penetrate by escalade, but they failed, and the party was at length compelled to retire, with a loss of twelve killed (including Lieutenant Forster), and ninety wounded.

Further developments were made in the batteries on both sides of the river, and, on the night of the 8th, Captain Patton, who was to conduct the assaulting column against the Castle, made a close examination of the fords of the Rivillas and the approach to the breach. He was accompanied by a sergeant of the Royal Military Artificers and an escort of three men, the latter of whom were left at some distance, he and the sergeant pushing forward by themselves. Having completed his investigations, Captain Patton was returning to his escort when he was discovered by a French piquet (Conolly states that he stumbled, and that the clanking of his sword betrayed him). A volley was fired, and he fell

mortally wounded. Sergeant Rogers defended him until the arrival of the escort, who succeeded in carrying him off. On being brought into the trenches he was able to report that no obstacles had been placed in the bed of the river or on the hill below the breach.

On the following night Christoval was once more assaulted. Captain Ross and Lieutenant Hunt guided the two parties, each consisting of 100 stormers with a working detachment of fifty men. Lieutenant Hunt's column was to carry the breach, whilst that guided by Captain Ross was to endeavour to effect an entrance into the work by escalade. Both attempts failed. Lieutenant Hunt was killed at the head of his column whilst still on the glacis; the men, nevertheless, pushing forward, only to find the breach obstinately defended. The escalading party succeeded in raising their ladders, but all efforts to establish a footing in the parapet failed. The French, warned by the previous attempt, and feeling sure that a second attack was imminent, had greatly strengthened the garrison, which now equalled their assailants in numbers. After an hour had been expended in a fruitless struggle, the two parties, which had become inextricably mixed, retired, having lost no fewer than 40 killed and 100 wounded out of the 300 men of which they had been composed.

On the following day Lord Wellington decided to raise the siege, he having that morning received an intercepted despatch from Soult to Marmont, which showed clearly that an advance in force for the relief of the place was imminent.

The failure of this siege was due to the successful resistance of Fort Christoval. Until that point was in the besiegers' possession it was impossible to storm the Castle, although the breach in its wall was practicable. Had the Engineers been at the head of a properly trained force, the necessary advances to the crest of the glacis might have been made by sap, and from that point the breach could have been stormed without much difficulty or loss of life. It is worthy of record that, owing to the scantiness of the earth on the rocky ground in which the batteries against Fort Christoval were to be constructed, a large number of woolpacks were purchased in Elvas and brought up. These were worked into the body of the parapet, and succeeded admirably both in resisting shot and also in retaining their form.

In his report on this siege to the Earl of Liverpool, Lord Wellington states—

"Lieut.-Colonel Fletcher, of the Royal Engineers, was the directing Engineer, and immediately superintended the operations on the left of

the Guadiana,* and Captain Squire those on the right of that river; and these officers, and the Corps of Royal Engineers, have by their conduct on this occasion augmented their claims to my approbation."

On September 1st, 1811, Captain Burgoyne wrote a letter to Captain Squire, Royal Engineers, dated from Albergaria, which bears on the second failure before Badajoz, as also on the approaching siege of Ciudad Rodrigo—

"We remain here precisely in the same state of uncertainty as to our future operations as when I last wrote, nor can I learn what progress the heavy convoy of besieging stores is making. There is an account current that his Lordship says 'if he undertakes another siege he will be his own engineer.' Whatever faults were committed at Badajoz, I suspect he was not aware of them" (this is evidently referring to what Burgoyne considered the mistakes of Marshal Beresford); "and I think it is very doubtful whether he knows them now. It appears to me probable that he did say so, by the mystery affected about *our* head-quarters respecting the siege, which I believe, in fact, proceeds from their knowing nothing about the matter. . . . . Macleod and Thomson are gone to repair the Ponte Murcella and bridge of Val des Pinos. Reid and Wright are with me here, and Emmett is coming. Mulcaster is marching up my company of artificers" (he had been sent to Lisbon suffering from a violent attack of fever, brought on by fatigue and exposure during the siege of Badajoz). . . . . "Gipps (R.E.), in answer to an order to join the army, has written a letter which has given offence, and, indeed, certainly might have been couched in more appropriate language. He states that Mr. Pink refuses to advance the £120, which is the least an officer can set himself up with, and in consequence he has not horses to enable him to take the field; that Mr. Pink did so before, but refuses now because the effects of some officers deceased in his debt have been given over to persons entirely out of the corps—a thing, as Gipps unfortunately expresses himself, which he believes *unprecedented in the army*. He has since written another on the subject, which he desires the colonel to submit to the master-general and board. He is now ordered to remain in the lines, and some one else comes up in his place.† I have just proposed at head-quarters to pay sixpence apiece for ballast baskets, to contain a cubic foot of earth, to such of my people as choose to make them at head-quarters in the heat of the day. Ten pounds would be well spent, I think, in this in the event of a siege."

Ciudad Rodrigo having fallen on January 19th, 1812, it was decided by Lord Wellington, after a conference with Lieutenant-

* This is not strictly correct. Lieutenant-Colonel Fletcher was in command of both attacks. Captain Burgoyne was the director of the attack on the left of the Guadiana.

† Gipps evidently afterwards made his peace with the authorities, as he was present at the approaching siege.

Colonel Fletcher, which took place at Gallegos on January 26th, again to attempt the capture of Badajoz. Stores were at once ordered to be prepared, and four Engineer officers, with a company of Royal Military Artificers, were directed to proceed to Elvas as an augmentation to the department there. Meanwhile the work of restoration of the ruined fortifications of Ciudad Rodrigo was pushed forward, and the place strengthened so as to render it more capable of withstanding a lengthened siege. On February 19th a Spanish garrison marched into the town, which was transferred to them on March 5th, when Lieutenant-Colonel Fletcher gave over the charge of the works to General Calvet. The army had been on the march for Badajoz for some days previously, and now the head-quarters followed them. The necessary Engineer stores and siege material were being quietly assembled at Elvas, and a bridge equipment of twenty-two pontoons had arrived from Abrantes. On March 14th this was moved to the Guadiana, and on the following day a bridge was thrown across the river. The army at once crossed, and effected the investment of the fortress on the south side.

Burgoyne's Journal.—"March 15th. A bridge of small English pontoons is established across the Guadiana, about ten miles below Badajoz, in the narrowest part that could be found (about 120 yards), there not being sufficient pontoons to form a longer bridge They are placed 4 ft. 6 in. asunder, and reckoned equal to pass nine-pounders. About a mile and a half higher up the river a flying bridge is commenced, composed of three large boats, to pass the battering train. The river is now fordable in various parts.

"March 17th. . . . The enemy are working hard at a retrenchment in the Pardilleiros outwork ; between that and the river they have countermined; they have dammed the little river Rivellas near the bridge leading from the Talavera gate to the detached ravelin, which is a most complete work, but small. . . . On the castle, the side we attacked last siege, they have made much improvement ; the breach in it is built up in form of a large tower, the escarp in other parts is renewed, and a very good parapet is made to the whole castle front, with several new embrasures and guns mounted ; the rocky side of the hill below is also occupied. The fort of San Christoval, on the opposite side of the river, is well covered by a new glacis and covert way at great labour, and a strong new redoubt erected 400 yards in front on the height where our breaching battery was situated last siege."

In consequence of this development of the strength of Fort Christoval it was decided not to renew the attack on that work. Lord Wellington therefore proposed to begin operations by the capture of Fort Picurina, after which the right face of the bastion La Trinidad and the left flank of the bastion Santa Maria were to

be breached from batteries established on the high ground around Fort Picurina.

The following officers formed the Engineer staff:—Lieutenant-Colonel Fletcher, Commanding Royal Engineer; Majors Squire and Burgoyne, Directors; Major J. T. Jones, Brigade Major; Major Macleod; Captains Ellecombe, Nicholas, Williams, Holloway, and Mulcaster; Lieutenants Gipps, Elliot, Emmett, De Salaberry, Stanway, Melhuish, Lascelles, Wright, Reid, Wells, Vetch, Harry Jones, and Pitts. (The last four only joined at the close of the siege.) The Royal Military Artificers consisted of the detachment from Ciudad Rodrigo, reinforced by a company from Almada, and numbered 115. With them were two sub-lieutenants of the Sappers, Wallace and Gibb, who both volunteered to act as assistant Engineers during the siege, and did their work so well that their conduct was specially reported to the Inspector-General of Fortifications. Sub-Lieutenant Wallace was wounded. There were also 120 men of the line under Major Thompson. These men had received some instruction in sapping, and most of them had already served at Ciudad Rodrigo. There were also 80 carpenters of the line, for laying the platforms, &c.

Burgoyne's Journal.—"March 17th. . . . The working parties are to be relieved every six hours; the three general officers, Generals Colville, Howes, and Kempt, are to take duty of the trenches in turns for twenty-four hours. Major Squire and myself are to be directors of the works, and relieve each other every twenty-four hours at 1 p.m. There are besides eight brigades of Engineers, of one captain, one subaltern, and one assistant engineer, each of whom are relieved three times a day."

The first parallel against Fort Picurina was opened on the night of March 17th, at a distance of only 160 yards from its covert way. The weather was so tempestuous that although the work was carried on in such close proximity to the fort it remained undiscovered until daylight. Two batteries in connection with this parallel were begun on the following day. At 1 p.m. on the 19th a heavy sortie was made from the town, the column consisting of 1500 infantry, accompanied by a party of 40 cavalry. The guard and working parties were taken by surprise, and for a few minutes the trenches were in the hands of the enemy. A rally was speedily made, and the attack driven back, comparatively little damage having been done. The cavalry had, however, dashed on, and were speedily in the Engineers' park, 1000 yards in rear of the trenches. Here they committed sad havoc amongst the unarmed men at work, many of whom were sabred without being able to offer any resistance. A relieving party promptly advanced, and the assailants withdrew without having destroyed

any of the stores. In this sortie the British lost 150 officers and men killed and wounded.* Amongst the latter was Lieutenant-Colonel Fletcher, who was struck in the groin with a musket ball. The shot fortunately encountered a silver dollar piece in his pocket, and drove it nearly an inch into the groin. But for this the wound must undoubtedly have proved fatal. As it was, he was incapacitated for active service until nearly the end of the siege. By Lord Wellington's order he retained the supreme direction of the work, the General coming to his tent every morning at eight o'clock to discuss and decide on the day's work. The Brigade Major of the Royal Engineers attended these meetings with a report and sketch of what had been done on the previous day. He afterwards conveyed to the Director on duty the instructions of the Commanding Royal Engineer for the coming day.

Burgoyne's Journal.—"March 22nd. . . Philippon" (the Governor of the fortress) "sends a despatch for Soult, folded up in the button of a Spaniard's coat; the Spaniard makes a *détour* and brings in the despatch to Lord Wellington. It states that he had made a sortie which had completely answered all his purposes; that we had lost in it 600 or 700 men, and that his loss had been *only* 100; he adds that he learned from some prisoners that we had 15,000 men before the place, and 20,000 at Merida, that affairs began to look serious, but that he and General Laval had taken every precaution to give us a warm reception should we attempt to attack the place *de vive force*."

The work of the trenches was carried on with the utmost difficulty, owing to the incessant rains which flooded the excavations, and washed away the parapets almost as fast as they could be constructed. On March 22nd the river rose so rapidly and to such a height that the bridge was carried away, eleven of the pontoons sinking at their anchors. The current gradually became so powerful that the flying bridge could scarcely be kept at work.

Burgoyne's Journal.—"March 24th. The enemy throw down trees and large beams of wood to float down the river and destroy our bridges; they could not do it at a worse time than when we have none."

The position at this time became most critical. It seemed impossible to keep the army supplied, nor could the guns for the batteries be brought across. Lieutenant Piper was thereupon directed to resume his charge of the pontoons and flying bridge, and Lieutenant Lascelles was detached to re-establish the bridge of communication over the Tagus at Villa Velha.

* Burgoyne says 112.

Letter from Major J. T. Jones to his brother, Capt. Jones, R.N. :—

"Camp before Badajos,
"My dear George, 24th March, 1812.

"I understand there is an opportunity for Cadiz, I therefore sit down to write you a few hasty lines. You will probably have heard that we invested Badajos on the 16th, and broke ground before it on the evening of the 17th. A few hours before we began the work, the weather, which had been so long fine, broke, and there came on a deluge of rain, which has continued nearly ever since. We commenced our operations very favourably, and, notwithstanding the almost incessant rain, we carried on our approaches for the first three days quite equal to our wishes; but for the last four days the ground has become so saturated with wet that it is almost impossible to do anything with it, and we certainly have lost forty-eight hours' work in consequence of it. We expected to have opened from our first batteries this morning, and at 2 p.m. yesterday there was but little doubt of our having everything in readiness, but about 3 p.m. the rain came down in torrents, and continued to do so for four hours, when the ground became so soaked that at every step the men sunk in knee-deep, and you may therefore suppose 24-pounders could not travel over it. Our trenches have all of them two and three feet water in them, and there is no prospect of a change in the weather; we must, however, persevere, and perhaps fortune may favour us in our turn. The attack is on the side of the outwork called the Picurina; we established ourselves the first night about two hundred yards distant from the fort, and we have had for three days past two batteries in readiness to open upon the fort at only one hundred and fifty yards from it, the one for six 24-pounders, the other for four 24-pounders. There is no doubt, therefore, that we shall blow the fort Picurina to pieces in the first day's fire; we might indeed do that now, but we cannot establish ourselves in the fort till the other batteries are ready to co-operate with us, as there are more than forty guns in Badajos which fire directly into the Picurina, and would make a lodgment nearly impracticable unless they were kept down by other fire. I am sorry to mention that Colonel Fletcher was wounded the other day in a sortie made by the enemy; the wound, however, is not severe, and I hope in a few days he will be able to go into the trenches again. We have only had one other officer wounded, and his wound is not severe. I have been in the daily expectation of the arrival of Harry, as he has been ordered to join us from Cadiz, as well as two other officers and some men. . . . . If we get seven days' fine weather there is every probability of our being in Badajos by April 3rd; if this weather continues it is impossible to say when we shall get in. How much depends upon the accidental circumstance of good or bad weather! I am sanguine in my hopes of success. . . ."

The work in the trenches proceeded but slowly, being most difficult, and indeed at times utterly impossible to make the necessary drainage effectual. All traffic was for a time either suspended

or carried on with extreme slowness. In spite, however, of all impediments, six batteries were completed and armed by the 25th, two (as referred to in the above letter) against Fort Picurina, two against the lunette San Roque, one against the Trinidad bastion, and one against the flank of San Pedro.

Burgoyne's Journal.—"March 25th. . . . . Poor Mulcaster was struck in the head by a cannon shot about ten o'clock, and half of it was taken off; his death was instantaneous. A better fellow or more promising officer never existed."

Fire was opened at 11 a.m., and although no great effect appeared to be produced by those bearing on the Picurina fort beyond silencing its fire, it was determined that that work should be stormed at 10 p.m. Two columns of 200 men each were told off for the first assault, a third of 100 men being held in reserve. The left column, conducted by Lieutenant Stanway, was to move round the right flank of the work and endeavour to penetrate by the palisaded gorge. It was hoped that the day's fire had sufficiently damaged the palisading to permit of an entrance being effected. The right column, conducted by Lieutenant Gipps, was to move round the left flank, cut off the communication with the town by posting half its numbers on the roadway in rear, and then with the other half support the left column in its efforts to force an entrance at the gorge. The parties moved off at the hour named, and reached their respective destinations without discovery. Here, however, they found that the palisades had been comparatively uninjured, and were consequently too strong to be forced. After several ineffectual attempts to overcome the obstacle, in which they suffered severely, they gradually drew round to the left flank of the work. The escarp at this point was well fraised, but the ditch was unflanked. Here they succeeded in mounting the parapet, and a desperate hand-to-hand encounter ensued. At this critical moment, and when the assailants seemed on the verge of being driven back, the reserve column, conducted by Captain Holloway, succeeded in escalading at the salient after a most obstinate struggle. The fort was now won. Many of the garrison who still maintained their resistance were bayoneted, others were drowned in the Rivillas in the attempt to retreat, and three officers with eighty men were taken prisoners. On the side of the stormers four officers and 50 men were killed, fifteen officers and 250 men wounded, Captain Holloway and Lieutenant Gipps both being amongst the latter.

These numbers are as given by Jones in his account of the siege. Burgoyne in his journal says:—

"Our loss was about 170 killed and wounded, with a large proportion of officers, among whom Capt. Holloway, of the Engineers, was shot through the body and lungs, and Lieut. Gipps very slightly wounded in

the arm. The redoubt was extremely strong, a palisaded covert way, then a scarp of about fifteen feet perpendicular, then a very strong row of fraises, and above an earth parapet. The fire of our artillery had done it no injury whatever, the scarp and fraises being perfectly covered by the crest of the glacis. The interior was very narrow; they had commenced casemates in the salient angle of the counterscarp to flank the ditch of the two faces, and pots containing live shells were preparing in the ditch. The enemy must have behaved very ill, notwithstanding our loss and the time we took to get possession of it, or we never could have got in."

A lodgment was at once thrown up across the captured work and connected with the parallel. In carrying this out Major Macleod was severely wounded.

In the attack on the Picurina the Royal Military Artificers greatly distinguished themselves. Particular mention is made of those who accompanied Captain Holloway. They broke through the palisades, reared the ladders, and, being themselves the first to mount, tore down the fraises to facilitate the work of the escalade. When Captain Holloway fell severely wounded on the parapet, Corporal Miller rushed to his aid and bore him safely back to camp.

Breaching batteries were now established as rapidly as possible, and an advance by sap pushed out against the lunette San Roque. In carrying out this latter work, rendered the more perilous from the want of training of the Sappers, Captain Williams and Lieutenant Elliot were both severely wounded. On March 31st the batteries opened, and continued their fire with great steadiness and precision. The masonry was, however, so good at both points, that it was some time before any perceptible effect was produced. It was not until the evening of the following day that the revetments were pierced and began to fall. In another twenty-four hours, at both breaches the masonry had given way, but in that at the Maria flank the casemates in rear, and in that at the Trinidad bastion, counterforts, supported the clay backing, and thus greatly impeded the destructive work of the batteries.

On the evening of April 2nd a bold attempt was made to destroy the batardeau. This had been constructed by filling in the arches of the bridge across the Rivillas in rear of San Roque, thus causing a wide expanse of inundation, which materially cramped the movements of the besiegers. Lieutenant Stanway was selected to carry out the design. He was assisted by a party of twenty Royal Military Artificers, and had an escort of thirty men. The powder charge of 450 lbs. was contained in two cases. On arriving at the spot, Stanway found that the garrison had thrown up a bank of earth to support the masonry of the batardeau, which had shown signs of yielding to the pressure of the water. He was thus unable to lodge his powder in close contiguity to the wall. Moreover, owing

to the heavy rains the batardeau had overflowed, and water was pouring over the top. He lodged his cases as near the wall as the bank permitted, but was not able to tamp them with the sand bags that had been brought. There were sentries on the bridge who were on the alert, and had already fired at the powder party. He felt, therefore, that to advance the number of men necessary to carry the sandbags would be fatal; so, having ignited the slow match, he retired to watch the result. No explosion followed; it was therefore evident that the slow match had failed. Stanway returned to the spot and relighted it. At the second attempt the powder ignited. The explosion did considerable damage to the batardeau, but was not successful in forming a vent for the pent-up waters of the inundation.

Letter from Major Jones to his brother, Captain Jones, R.N.:—

"Camp before Badajos,

"My dear George,— 4th April, 1812.

". . . We are very busy, but I trust that our labours are drawing near to a conclusion, as this day or to-morrow will give us two practicable breaches in the walls. I wrote you a long letter about a week or ten days since, in which I detailed to you our proceedings. Since that time we have advanced progressively, and for the last five days we have had twenty-six guns battering in breach. The weather, which for the first seven days was execrable, the rain coming down as in the Deluge, has since changed and continued fine. Our loss does not yet exceed eight or nine hundred in killed and wounded. Colonel Fletcher, I am happy to say, is able to ride a little, and there will be no ill consequences from his wound. We have had several officers wounded; amongst others is Captain Holloway, son of Sir Charles: he was shot through the lungs when gallantly leading the storming party at the attack of Fort Picurina —he was shot on the top of the parapet. It gives me much pleasure to add that he is out of all danger. You may recollect Mulcaster and Macleod of the Engineers in Sicily; the former, poor fellow, had his head carried off by a cannon shot, and the latter is badly though not dangerously wounded. What a provoking thing it will be for Harry to arrive at the close of the business! he will not be here till to-morrow." (He and the other Engineers were in time for the assault.) "I shall now put this up, to detail to you the occurrences of the storm. The breach will be well defended, and our loss will be great. Badajos, however, is worth 2,000 men, the number I calculate that will fall in the breach. . . ."

(The remainder of the letter merely tells the fact that the place was taken, and enumerates the Royal Engineers' casualties at the storming.)

Burgoyne's Journal.—"April 4th. The breaches not thought practicable in the evening. At night go with Wells (R.E.), and examine the forts of the Rivellas under the castle. It can be crossed with difficulty near its mouth, and even the wall from the castle into the river can be

crossed by a path that might easily escape observation. We therefore propose introducing 200 men by that way round the foot of the castle to the river wall, and endeavour to get in by surprise, while another body makes the same attempt below the bridge; if one succeeds the way might be open to the other, and then the two uniting would secure a footing sufficient to introduce a large body. But this project is thought hazardous, and the castle is to be scaled instead in the highest part, under which the river may be crossed at a mill dam as we ascertained."

On April 5th the breaches were reported nearly practicable, and it was expected that a few hours' more fire would render them fit for assault. In the afternoon, Lieutenant-Colonel Fletcher, who had now sufficiently recovered from his wound to be able to visit the lines, made a careful inspection of both breaches from various points of view in the advanced trenches. He perceived that they had been strongly retrenched, and in every way prepared for a most obstinate resistance. He therefore suggested to Lord Wellington that the assault, which it had been intended to deliver that night, should be postponed for twenty-four hours, and that in the interval all the available guns should be directed on the wall of the curtain between the two breaches. The masonry at this point was believed to be very bad, and it was hoped that one day's fire would make a practicable breach, which the garrison would have no time to retrench or otherwise protect. It would, moreover, afford a third point of attack, and thus distract attention.

Fire was kept up vigorously against this curtain, and by four p.m. on the 6th the breach was considered practicable. Orders were now given that the place should be stormed that night at ten o'clock. Five separate attacks were to be made, the columns being thus arranged:—

Major Burgoyne and Lieutenant Wells were to conduct the Third Division in an attack on the Castle by escalade.

Captain Nicholas and Lieutenant Emmett were to perform the same duty for the Fourth Division, which was to assault the breach in the Trinidad bastion, as well as that in the curtain.

Captain Williams and Lieutenant De Salaberry were to guide the Light Division to the breach in the Maria flank.

Lieutenant Lascelles and Lieutenant Melhuish were to conduct the Fifth Division to escalade the escarp wall on the river side of the fortress, near the bastion San Vincente.

Lieutenant Wright was to conduct a body of the guard of the trenches to storm the lunette San Roque.

These officers were to be assisted by parties of volunteers from the Royal Military Artificers, or linesmen doing duty with the Engineers, who were to be furnished with axes and crowbars.

At the appointed moment, the men led by Lieutenant Wright

moved out of the trenches and escaladed the gorge of San Roque, the attention of the garrison having been diverted by a heavy fire from the sap on the covert way in front. In a few minutes the work was taken, the garrison made prisoners, and a lodgment commenced.

Meanwhile, Major Burgoyne and Lieutenant Wells guided the ladder party of General Picton's division to the Castle. As soon as they had reached the bank of the Rivillas, they were discovered, and a heavy fire opened upon them from all sides. In spite of this the column advanced with admirable steadiness up the hill, and on reaching the foot of the Castle wall the ladders were raised. The opposition of the garrison was most determined. Loaded shells, logs of wood, blocks of stone, and other missiles were hurled upon the heads of the men engaged in fixing the ladders, and when these were in their places the first of the stormers were bayoneted as soon as they showed themselves above the crest. For some time it seemed impossible that success could attend an operation so apparently impracticable in the face of such an obstinate resistance.

General Picton had been wounded before the Castle wall was reached, and the command had fallen upon General Kempt. This gallant soldier was not to be refused, and the officers of the division nobly seconded his efforts. Fresh men rushed forward, without the least hesitation, to take the place of those who had fallen, and eventually an entry was forced, the defenders bayoneted, and the division formed up within the castle. It was then discovered that all the gateways leading into the town had been either walled up or too strongly barricaded to be forced, so that it was impossible at the moment to push forward on to the ramparts of the enceinte to support the assaults then being delivered at the breaches.

Whilst this attack had been going on, the two divisions conducted respectively by Captain Nicholas and Captain Williams advanced along the western side of the inundation to the covert way in front of the breaches. They were soon discovered, and a heavy fire directed on the heads of the columns. The descent into the ditch was effected, as at Ciudad Rodrigo, by means of bags of hay which had been carried for the purpose by the Sappers who headed the assault. On these, as soon as a sufficient number had been thrown down, the men jumped. The garrison, as an additional obstacle, had dug a deep trench close to the counterscarp, which was filled with water from the inundation. Many men were drowned by falling into this trench in the darkness. Meanwhile, fougasses were exploded, shells and other combustibles poured down, and a withering fire of musketry kept up on the surging mass as they collected together to storm the breach. Here a most deplorable error was committed. The front had been in process of

remodelling at the time the siege began. Amongst other alterations the ditch had been widened, and it was intended to construct a ravelin to cover the curtain. A portion of the old counterscarp and covert way was left intact to form part of this ravelin, the new ditch being excavated around it. The stormers mistook this unshapen mass of masonry for the breach, and clambered up its rugged sides. On reaching the top they found themselves confronted by a steep descent, whilst the foot of the real breach lay beyond. Nor was this the only fatality. Both of the Engineers leading the left division had been disabled in the covert way. That column, therefore, deprived of professional guidance, instead of assaulting the breach of the Maria flank, became mixed with the men of the right division, and all was confusion and disorder.

Before these mishaps could be rectified the losses had become so severe that it was impossible for the officers to collect a body of men sufficiently organized and cohesive to make an effective assault. Time after time handfuls of men were led to the attempt, and the number of officers killed and wounded on these deadly breaches proves the extraordinary gallantry of the efforts made; but all was in vain. The garrison, encouraged by the success of their defence, redoubled their exertions, whilst the onset of the stormers became less and less vigorous, until at length it ceased altogether. The men had no idea of retreat, but they seemed stupefied and ready to die where they stood, incapable of further exertion.

Lord Wellington, who with Lieutenant-Colonel Fletcher and the rest of his staff had been eagerly watching the progress of events, now decided on withdrawing the two divisions, intending to renew the assault a little before daylight. At this moment he received intelligence from General Picton that the Castle was in the hands of the British. He thereupon gave instructions that the obstacles which barred their way into the town were to be blown down, and that they should then await the renewal of the attack on the breaches, and support it by a flank movement along the enceinte.

The fifth division, to be conducted by Lieutenants Lascelles and Melhuish, had been impatiently awaiting the arrival of their ladder party, which had missed its way on the road to the rendezvous. An hour was lost before the error was rectified; they then moved forward to the point indicated for the assault, and after a sharp struggle succeeded in escalading the left face of the San Vincente bastion. So much prejudicial to the brave efforts of the besiegers had occurred on this fatal night, that it is cheering to be able to record a stroke of luck on their side. The scarp wall of this face had been rebuilt, and at the salient it was intended to construct a guerite. Some feet of the wall had been left unfinished at that point for the purpose, and it was here that the escalade was

Major William Nicholas
Royal Engineers,
killed at Badajoz 1812.

effected. Even under these favouring circumstances it was not until over 600 of the stormers had been put *hors de combat* that the defence was overpowered. When, however, the division was once established within the enceinte the fate of the town was sealed. With the Castle and the San Vincente bastion both lost it was impossible to continue the struggle, and the fortress was won.

It was an event without parallel in war. Three practicable breaches had been formed and columns detailed for their assault. To aid their efforts and distract the defence two points were selected on which an escalade was to be tried, with but little idea that they could be more than mere feints. Both the escalades were successful, whilst the main attack on the breaches proved a disastrous failure. The town fell from the effects of what had only been intended as diversions.

Of the officers of Engineers who led the columns three were killed and three wounded; the former being Captain Nicholas and Lieutenants de Salaberry and Lascelles; those wounded were Captain Williams, Lieutenants Emmett and Melhuish. Much of the disaster at the breaches must be attributed to the early loss of the only men competent to guide the columns through the complications of the enceinte.

As regards the work done by Captain Nicholas, we have the following record from the pen of Sir William Napier in his description of the assault:—

"Nicholas, of the Engineers, was observed by Lieutenant Shaw, of the 43rd, making incredible efforts to force his way with a few men into the Santa Maria bastion. Shaw immediately collected fifty soldiers of all regiments and joined him, and although there was a deep cut along the foot of that breach also it was instantly passed, and these two young officers led their gallant band with a rush up the ruins; but when they had gained two-thirds of the ascent a concentrated fire of musketry and grape dashed nearly the whole dead to the earth. Nicholas was mortally wounded, and the intrepid Shaw stood alone."*

The two following descriptions of what they saw on this eventful night are from the pens of Lieutenants Vetch and Pitts. In a private letter Vetch writes:—

"I think I told you that three officers of Engineers and thirty miners were ordered from Cadiz to Elvas. Our orders were dated, Head-Quarters, 1st March, 1812, so that we were perfectly aware of being wanted for the siege of Badajos. We received our orders on the 12th March and embarked on the 15th, but did not sail till the 23rd, being detained in Cadiz bay by a gale of wind, and we were unfortunately four days at sea going to Ayamonte. We sailed up the Guadiana fifty miles,

* Napier's "War in the Peninsula," vol. iv. pp. 118, 119.

and had then 130 miles to march to Elvas, which we reached in six days. I got one day's start of the party, and arrived at the camp before Badajos on the morning of the 5th of April. Every disposition was made for the attack on that day, and all parties told off. I volunteered my services, and was ordered with a party 200 strong to make a lodgment in the ravelin of S. Roque, and secure that point in case the other point should fail. The storm was, however, put off till the following night. I was employed the first night in advancing the approaches. We were three or four officers, at least half an hour laying out the work not eighty yards from the French parapet. The sap was marked out with a white cord, and the men put down as near as they could work along the line. They squatted down and worked away as hard as they were able in order to cover themselves. The enemy did not discover what we were about until three officers had retired and the men had been at work some time. The moment we were perceived they opened a very sharp fire of musketry and killed seven men the first half hour, after which our men got too much cover to be hit. Next night the storm took place at ten o'clock. I was before the ravelin again between the storming party for the castle and that for the barracks" (? breaches), "and very near to both. I had therefore a close view of this anxious and tremendous scene which I cannot possibly describe as well as you may imagine. Our storming party was a good deal fired at from the parapet, and the fire was thick enough. The ravelin was soon carried, but a long and anxious time succeeded without the expected shout from the points of attack, and the awful scenes on the right and left suspended all concern for ourselves. Our working parties could hardly put their picks and shovels to the ground. An hour elapsed with most tremendous firing, and no signal of victory. All this time our men were falling by dozens. I declare nothing ever equalled my sensations at this time, and if the place had not fallen I should have been tempted to shoot myself. Even the fall of the town gave little consolation when I saw the loss we had sustained at the barracks" (? breaches). "I am but a young soldier and may get the better of these things The town would not have been taken if the attack on the Castle had failed."

In another letter Vetch says :—

"My party of 200 men, which attacked the ravelin, carried it immediately, and marched their prisoners through the breaches. General Picton carried the Castle about 10 p.m. The parties at the breaches were completely repulsed; those escalading on the left succeeded about 2 a.m., with great slaughter. At 3 a.m. we had pretty good light, and we discovered that the enemy had left a gate open near the ravelin, which three of our companies took possession of. I was in the town at 3 a.m., and it was completely in our possession at 4 a.m. I had been sent out to give notice of the gate being in our possession, and got in again about 5 a.m. in good daylight to behold the most shocking scenes of dead and wounded, and the soldiers pillaging the houses. Not many of the inhabitants were killed; but all were left without a rag to cover

them or a morsel to eat, broken chairs and tables only were left. The pillage lasted two days, when two gallows were erected to show the pillage was over. When looking about for quarters I was implored by a lady to take my abode under her roof for a protection, and I remained there two days. I found my hostess was a Marchioness. Lord Wellington called twice at my billet, and the poor lady had scarce a gown to cover her back."

Pitts writes under date April 7th :—

"The loss in the storm I fear has been very great. In our corps it was dreadful. I was on duty in the trenches on the night of the 5th, and again last night during the storming, where I was so placed as to catch most of the balls that passed over the heads of the party storming the Castle and the ravelin in front and to the right of the Castle, but had *good luck*. Nicholas and Emmett led the storming party to the great breach, Capt. Williams and de Salaberry to the breach in the flank of the bastion of Santa Maria, Burgoyne and Wells to the Castle, Lt Wright the ravelin before mentioned, Lascelles and Melhuish the attack on the left by the 5th Division, Capt. Wedekind, Vetch, Reid, and myself to the trenches to construct a parallel before the ravelin before mentioned in case the attacks had any appearance of failing, which parallel was begun and continued until daylight. Mulcaster,* Lascelles, and de Salaberry are killed, Nicholas wounded in five places and two contusions, one of the wounds through the lungs, and two ribs broke, his left arm broke below the elbow, his left knee touched on the cap, his left calf and right thigh grazed with musket balls. Fitzpatrick says he *must die*. I am at present nursing him and Emmett, and can only write by bits. The town has been given up to pillage, and thoroughly pillaged it has been. There were ten Engineers in the place; poor Nicholas needs all my care for the *short time* I fear he has to remain on earth. His father has lost two sons in the Navy, both drowned." †

A graphic account of the escalade of the Castle was written by Captain M'Carthy, of the 50th Regiment, who was an Assistant Engineer, and was with Burgoyne and Wells in conducting the assaulting party. The following are extracts:—

"On the 6th all minds were anxious for the advance, and orders were issued for the attack at ten o'clock that night. I again with Major Burgoyne attended, by appointment, General Picton at eight o'clock p.m. General Kempt and several others were there. General Picton, having

* This was an error. Mulcaster had been killed on March 25th, as mentioned both by Burgoyne and J. T. Jones.

† It is a sad coincidence that a precisely similar fatality attended the writer's own father. Poor Pitts was killed in carrying the fort of Hastingues, in the South of France, in 1814, and his two brothers, both in the Navy, were lost, one being drowned in the Channel in 1806, and the other having died at sea in 1814.

explained his arrangements and given his orders, pulled out his watch and said, 'It is time, gentlemen, to go,' and added, emphatically, 'Some persons are of opinion that the attack upon the castle will not succeed, but I will forfeit my life if it does not.' We returned to the engineer depôt, where the fatigue party and others had assembled to receive ladders, axes, &c., which General Picton superintended himself and repeated to them some directions. He then asked who is to show me the way? and Major Burgoyne presented me to him." . . . . "I was to conduct the division to a certain point in the trenches to meet Major Burgoyne, and thence to the escalade, and naturally felt the weight of the charge, for if I had misconducted so that *this* division arrived too late, I cannot, even now, ruminate on the result. But I had been so perfectly instructed by Major Burgoyne that I could not err." . . . . "The firing of the enemy's musketry becoming brisk increased the General's anxiety" (Picton had before this begun to doubt the accuracy of M'Carthy's leading), "lest any occurrence should retard the operation of his division." . . . . "Emphatically expressing himself, said that I was blind, he supposed, and going wrong, and drawing his sword swore he would cut me down. I explained, and he was appeased. We soon after arrived at the very spot in the first parallel where Major Burgoyne was waiting." . . . . "The division then entered the trench and proceeded nearly to the end of it, when the enemy's fire burst forth in every direction over the division. The grandeur of the scene was indescribable. It was as light as day. General Picton exclaimed, 'Some of them are too soon. What o'clock is it?' and comparing his watch with others, the time was a quarter before ten o'clock. I mention this, because it has been supposed that General Picton's division approached too soon. When the division had advanced some distance from the parallel, and General Picton at its head with General Kempt, Major Burgoyne, the staff, and myself, the enemy's fire increased considerably, and I was walking between General Picton and General Kempt when General Picton stumbled and dropped, wounded in the foot. He was immediately assisted to the left of the column, and the command devolving on General Kempt, he continued to lead it with the greatest gallantry. On arrival at the mill dam (extremely narrow) over which the troops were to pass streams of fire blazed on the division; the party with ladders, axes, &c., which had preceded were overwhelmed, mingled in a dense crowd, and stopped the way. Being by the side of General Kempt, I said for recognition's sake, 'This is a glorious night, sir—a glorious night,' and rushing through the crowd (numbers were sliding into the water and drowning), I found the ladders left on the palisades in the fosse and this barrier unbroken. In the exigence I cried out, 'Down with the paling,' and aided by the officers and men in rocking the fence made the opening at which the division entered, and which was opposite the before mentioned mound; then 'Up with the ladders.' 'What! up here?' said a brave officer (45th). 'Yes,' was replied. And all seizing the ladders, pulled and pushed each other with them up the acclivity of the mound as the shortest way to its

summit. The above officer and a major of brigade laboriously assisted in raising the ladders against the wall, when the fire was so destructive that with difficulty five ladders were reared on the mound, and I arranged the troops on them successively according to my instructions, during which I was visited by General Kempt and Major Burgoyne, although this place and the whole face of the wall being opposed by the guns of the citadel were so swept by their discharges of round shot, broken shells, bundles of cartridges, and other missiles, and also from the top of the wall ignited shells, &c., that it was almost impossible to twinkle the eye on any man before he was knocked down. In such an extremity four of my ladders with troops on them, and an officer on the top of each, were broken successively near the upper ends, and slid into the angle of the abutment. On the remaining ladder was no officer, but a private soldier at the top in attempting to go over the wall was shot in the head as soon as he appeared above the parapet and tumbled backwards to the ground, when the next man (45th Regiment) to him upon the ladder instantly sprang over. I instantly cheered, 'Huzza! There is one over, follow him!' But the circumstance of the ladders being broken delayed the escaladers in this part a short time until the ladders were replaced, so as to reach the top of the wall which enabled the troops to pass over."*

There were twenty-four Engineer officers employed at this siege, of whom four only joined the day before the assault. Of this number four were killed and nine wounded.

The scenes that took place on the capture of the town have been often described, and constitute a sad blot on the gallantry that had been shown by all concerned on the night of the assault.

Major Jones in his "Memoirs" remarks—

"It was surprising to see the firmness and energy with which, animated by feelings of honour, and controlled by discipline, the troops stood to be killed in the ditch during the assault, but infinitely more surprising to see with what *sang froid* those same men, become plunderers and violators, submitted themselves to the Provost to be hanged or otherwise disgracefully punished. Their humiliation was truly painful to behold, and the execution of men in a state of almost brutal insensibility so as to be scarcely accountable beings, excited a thrill and a pang, although felt to be absolutely necessary for general safety. Major Jones singly accompanied Lord Wellington whilst walking round the defences, and his Lordship not being recognized witnessed many sad scenes of drunkenness and brutality, and on going out of the place sent Major Jones to the commandant to express to him his strong disapprobation of the conduct of his garrison, and to announce his orders that the troops should be paraded and the roll be called every two hours."

* "Recollections of the Storming of Badajoz," by Captain M'Carthy, 50th Regiment, and Assistant Engineer, 3rd Division.

The following reference was made to the services of the Royal Engineers in Lord Wellington's despatch, announcing the fall of Badajoz:—

"The officers and men of the corps of Engineers and Artillery were equally distinguished during the operations of the siege and in its close. Lieut.-Colonel Fletcher continued to direct the works (notwithstanding that he was wounded in the sortie made by the enemy on the 19th March), which were carried on by Major Squire and Major Burgoyne under his directions. The former established the detachments under Major Wilson in the ravelin of San Roque on the night of the storm; the latter attended the attack of the 3rd Division on the Castle. I have likewise to report the good conduct of Major Jones, Captain Nicholas, and Captain Williams, of the Royal Engineers."

The series of sieges which had now taken place taught the Government a lesson not to be overlooked. The extreme difficulty of carrying on this class of operation without the assistance of a trained body of Sappers was the cause not only of the two failures, but of much of the loss of life that attended the successful termination of the other two. In the bitterness of the moment, and smarting under the fearful number of deaths entailed by the capture of Badajoz, Lord Wellington was induced to be far from just to the Engineers. He wrote as follows to General Murray:—

"I trust, however, that future armies will be equipped for sieges with the people necessary to carry them on as they ought to be, and that our Engineers will learn how to put their batteries on the crest of the glacis and to blow in the counterscarp, instead of placing them wherever the wall can be seen, leaving the poor officers and troops to get into and cross the ditch as they can."

It is not necessary in the present day to attempt any defence against this accusation. It is well known that Lord Wellington habitually underrated the impediments attending siege operations, and neglected to make due preparation for them, even when there seemed no great difficulty in so doing. The Artillery suffered from this cause quite as much as did the sister corps; and their complaints were equally bitter and well founded. The truth was that Lord Wellington's strategy at this time required that all siege operations should be conducted in the most hasty manner, and he was prepared to sacrifice life rather than time to accomplish his purpose. He had a firm trust in the British bayonet; and it was he quite as much as the Engineers who insisted upon forming breaches and assaulting, without waiting for the slower and more scientific methods of approach. Nor is this said in reproach, for the army was not at the time provided with a corps of trained Sappers, without which such a mode of advance would have been

well nigh impracticable. The system adopted, and for which Lord Wellington is quite as responsible as Colonel Fletcher and his brother officers, was probably after all the best that could be devised under the circumstances. It showed, however, the urgent necessity for a trained body of men, and the School of Military Engineering was the outcome of that want.

CHAPTER XIII.

1812-1813.

Destruction of the Bridge of Almaraz—Siege of the Salamanca Forts—Pitts' Description—Battle of Salamanca—Entry into Madrid—Capture of the Retiro—Siege of Burgos—Description of the Castle—Project of Attack—Capture of Hornwork—Failure of Assault on Outer Line—Lord Wellington's Head-quarters—Mine Exploded and Breach Assaulted—Failure of the Attempt—Second Mine Exploded and Outer Line Captured—Lieut.-Colonel Jones Wounded—Sorties of the Garrison—Failure of Assault on Inner Line—The Siege Raised—Burgoyne's Remarks—Pitts' Journal—Retirement of the British Army into Portugal—Burgoyne at El Boden—Battle of Vittoria—Blockade of Pamplona.

The capture of Ciudad Rodrigo and Badajoz having opened the way into Spain and secured the line of communications in the event of an advance, Lord Wellington prepared to assume the offensive. This was rendered the easier because Napoleon preferred to strike a higher key-note by a gigantic expedition into Russia, rather than to pour into Spain such extensive reinforcements as would have compelled the British to remain quiescent within their lines.

As a first step towards carrying out his project, Wellington directed Sir Rowland Hill to attempt the destruction of the French bridge of boats at Almaraz. This was the only means of crossing the river Tagus left to the enemy, all the main permanent bridges having been destroyed one after the other. They had therefore provided for its security by the construction of two powerful redoubts, one on either side of the river, with *têtes-de-pont* on both banks. By a brilliant and dashing stroke, Hill succeeded in escalading one of the redoubts, and having then turned the guns found therein on the other, he compelled the garrison to evacuate it and retire. The stores that were in the redoubts, as well as the bridge itself, were destroyed, the works dismantled, and the troops marched back to the army. Lieutenant Wright, the only Engineer officer with the force, was wounded during the attack.

Burgoyne's Journal.—"May 23rd. Sir Rowland Hill has taken the *tête-de-pont* of Almaraz by assault, made 300 prisoners, and killed 200.

Wright of ours said to be wounded slightly. We also just learn that poor Squire died suddenly of a paralytic stroke at Truxillo; thus we have lost, in my mind, the best officer of the corps, and a man who, I believe, never had an enemy."

The French armies operating on the two sides of the river had now lost touch of each other, and were unable to unite for any joint action. Lord Wellington took advantage of their paralyzed condition to push forward to Salamanca. In that town they had collected a considerable depôt of ammunition and military stores. To protect these, and also to secure the bridge over the Tormes at this point, a strong defensive position had been taken up. This was effected by fortifying three well-built convents—San Vicente on the north, and Gayetano and La Merced on the south. San Vicente had been developed into a powerful fort, of which the convent only formed the keep, and was capable of withstanding any efforts short of a regular siege. The other two points had been converted into redoubts by the removal of their roofs, the walls being adapted with much ingenuity to form escarps and counter-scarps, within which plenty of bomb-proof cover had been provided.

To these works Lord Wellington decided to lay prompt siege, although his artillery resources were of the most limited description. Lieutenant-Colonel Burgoyne was his Commanding Royal Engineer, and under him were Lieutenants Pitts and Reid, with nine Royal Military Artificers.

Burgoyne's Journal.—"June 17th, 1812. I accompanied Lord Wellington to reconnoitre the fort from the cathedral and other high buildings of the city, and although it was found to be more respectable than had been conceived, it was determined to attempt to breach the convent wall of St. Vincent, and the most convenient spot was selected for erecting a battery for that purpose. This battery, with its communication, was commenced at night by a working party of 400 men. Being full moon the work was soon discovered by the enemy, and a fire of musketry directed on it. The nights were very short, and the ruins rendered it impracticable to excavate inside or out. The 6th Division had not been employed in the previous sieges, and great difficulty was found in keeping them to work under this fire; the Portuguese, in particular, absolutely went on their hands and knees and dragged their baskets along the ground. It was impossible much work could be done under such circumstances; the battery by daylight was not quite to the height of the *genouillère*. The ditch presenting a considerable obstacle, Lieut. Reid, with four miners of the line, and twenty men of the covering party, made an attempt at night to blow up a part of the counterscarp opposite the end wall of the convent proposed to be breached. The glacis there not being complete, it appeared that the miners might work under cover. The enemy had a

picket outside, and a dog with them gave the alarm on the approach of our party. The picket was driven in after some little opposition, and the miners set to work; but the soil being loose, and difficult to sink in, and the spot exposed to plunging fire from the convent loop-holes, after losing several men, the party was withdrawn, the object under the circumstances being impracticable. It had the effect, however, of engaging the attention of the enemy very much from the working party at the battery."

The first battery opened fire on the 19th, but it soon became apparent that the artillery power at the command of the besiegers was insufficient, and, moreover, that there was not enough ammunition, even for the few light guns available. At 9 a.m. on the 23rd, a fresh battery opened on the gorge of Gayetano, but not having effected any breach by night an assault by escalade was ordered. The stormers were led by Lieutenant Reid, and succeeded in getting two ladders fixed; but they failed to penetrate the work, and were compelled to retire, with a loss of 120 men killed and wounded.

Additional ammunition having been brought up, fire was reopened on the 26th, against both San Vicente and Gayetano, red-hot shot being used, with the hope of destroying the works by fire. By 10 o'clock a.m. on the 27th both were in flames, and soon after the Commandant at Gayetano hoisted a white flag. The remainder of the story is best told in Pitts' own words:—

"The Convent was on fire in several places; at eleven the Commandant of Gayetano offered to surrender both Gayetano and Merced in two hours. I happened to meet Lord Wellington first and told him. He ordered me back and said *five minutes*. The Frenchman was stiff and would have his two hours. My Lord would not flinch from his five minutes, and after a third parley the Frenchman said he would stand the assault. In the meantime the governor of San Vicente offered to capitulate. Lord W. ordered the troops to move to the assault of Gayetano, which was carried with scarce any opposition, and the garrison lost their baggage and everything except the clothes on their backs. Thus ended our siege. We should have had the place on the fourth or at most on the fifth day if we had had ammunition, and this would have been very quick, but as it is to men who understand our *shop* I am certain we deserve a great deal of credit. Our batteries were made with large flour sacks, scarce movable, and into the bottom of the parapets we put beds got out of the French hospital. The unwieldiness of such articles under a heavy fire of musketry and grape, with soldiers who had never been in action, without a sapper, and only two officers of Engineers for detail duties, are difficulties which would make a Vauban stare. To make our platforms we had two saws and scarce a spike, and these platforms made of rough joists of all sizes and dimensions, but our greatest difficulty was in the embrasures. I see Reid is mentioned in Lord W.'s dispatch for his

conduct with the storming party on the night of the 23rd, and fully deserved it. Burgoyne, in his report about the siege, says, 'Both were equally desirous to lead the storming party, but Pitts being the senior officer I designed him to lead that against San Vicente, which it was expected would take place, and Reid took the lesser one.' There was another reason which alone could have induced me to have allowed Reid the first opportunity. Reid is very low down and has distinguished himself on *several occasions*. Applications have been made to obtain for him the rank of Captain. This will add weight to the former ones, and if he gets it, it *lays open* the same opportunity *to others*. I could not possibly expect it, for once being mentioned when it has been so very much objected to for others who had more claims, besides I *must* have the rank shortly and the good luck a step would do me would be very trifling, whereas to him it was everything. Burgoyne could not make this public."

This generous project was not successful, red tape proved too powerful, and Reid remained a subaltern. We get another peep at Corps gossip about this time from the same source:—

"We hear there are such people as *Lieut.-Cols.* Squire, Burgoyne, and Jones. I am likewise in hopes we shall soon see Lieut. Reid promoted to the rank of Capt. in the army, and if we can but get a precedent for a 2nd Capt. being made a Major the Corps will then be made. I think it a great shame if they make any scruple to promoting the 2nd Capts., and as to Reid's promotion I fancy it is almost settled. He is an uncommon fine fellow, zealous to the highest degree, and *devoted* to the service. With their promotion to look up to, and a good Corps of Sappers and Miners (until we get which, we want our best half), we'll knock the dust in Johnny's eyes in a way that will make them wink. Burgoyne is a famous fellow, a Capt. and Lt.-Col. at 29. The army have had enough of sieges and have found out that half a dozen general actions are better than one siege, still this promotion tickles their fancy. Give the officer promotion and the soldier a little *plunder*, I'll warrant they won't object to a siege once a year, nor the Engineers either."

The capture of Salamanca and its forts brought about the battle of that name, which was fought on July 22nd, when Lord Wellington gained a glorious victory over Marshal Marmont. Burgoyne, Reid, and Pitts were all present, and the latter, who served as aide-de-camp to Lieutenant-General Cole, gives the following account of his experiences:—

"Head-quarters Flores, two leagues from Penacanda,
"towards Madrid, July 25th, 1812.

"As soon as I found we were to have a fight, with Burgoyne's permission I went to Lt.-Gen[l]. Cole and offered my services, which he accepted, and I did A. D. C.'s duty to him. We got into the thick of it, and he, poor fellow, was shot through the breast, but I understand is

doing very well. I got no further mischief but a shot through my coat pocket, which will make a job for the tailor. In the orders Lord W. had given out, he has clearly shown he was afraid of the too great ardour of his soldiers, but their steadiness and obedience to orders was as conspicuous as their bravery. What can resist British soldiers who, when wounded, ask an officer passing by, 'Are they well licked, your honour?' 'Yes, my lad.' 'Then I don't care a d——n.' Probably so large an army was never so soon defeated. Our soldiers never stopped at anything: they moved forward and walked over the Frenchmen."

Burgoyne's Journal.—"The conduct of my old friends the 3rd Division was most conspicuous. Supported by a body of our cavalry, they made a tremendous rush, and overwhelmed everything before them. One strong French regiment, with a body of cavalry, made a splendid rally, and retook a height with the bayonet in the most gallant style. Our troops had but just gained it, and had not had time to form again in order; but even then they did not give it up, although ours was a much smaller regiment, until the enemy's column was close to them. The French regiment came up the hill with a brisk and regular step, and their drums beating the *pas de charge*. Our men fired wildly and at random among them; the French never returned a shot, but continued their steady advance. The English fired again, but still without return; they stood their ground, however, with great courage. But men in such confusion had no chance against the perfect order of the enemy, and when the French were close upon them they wavered and gave way. The officers all advanced in a line in front, waving their swords and cheering their men to come on, but the confusion became a panic, and there was a regular *sauve qui peut* down the hill. No sooner had they arrived at the bottom than they came to their senses, and were furious with themselves for having allowed the enemy to gain the advantage. In about five minutes they were formed in perfect order at a short distance below, and they then reascended the hill most gallantly, and drove the French down the other side as quickly as they themselves had been driven before. I went down and came up the hill with them, and I could not help thinking what credit was due to our troops who could so universally beat an enemy capable of such efforts." . . . . "The people of Salamanca have shown the greatest loyalty and attachment to the cause, even when there was every appearance of our being about to abandon them, and when the battle was over I met at ten o'clock at night all the medical men of the city coming out by torchlight with jackasses loaded with bandages, &c., to dress the wounded."

Pitts' Journal.—"We entered Madrid August 12th. Burgoyne was sent to summon the Governor of the Retiro to surrender, which he refused."

Burgoyne's Journal.—"Learning from the Spaniards that there is a garrison in the Retiro to protect their sick only, Lord Wellington sent me on with six dragoons to summon the place. They fired repeatedly

at me when I attempted to go in on the side of the town from the walls of the Retiro park, which they occupy, but on the country side they let me in. The Governor was hurt at a verbal message being sent them, and answered, *Les Français ne se rendent pas si facilement.*"

Pitts' Journal continued.—"The people were half mad with joy, and it was as much as we could do to get through the streets. Being the first that entered we got the brunt. They preceded us with boughs of trees and in crowds, and made so much noise we could not hear the trampling of our horses."

"August 13th. Lord Wellington came in to-day; the forts were reconnoitred, and preparations made to drive the enemy from the park wall and buildings of the Retiro, which was effected this evening with very trifling loss."

"August 14th. Preparations were made to storm the interior retrenchment into which the enemy had retired. Our posts were within 100 yards of him. It was intended to carry this retrenchment by storm, and shut the enemy within the Star fort, to make use of the ditches and parapets of the retrenchment as cover, to erect a battery against the building and set it on fire with hot shot or breach it. This would have succeeded, I think, without a doubt, and we might have had the whole on the 16th. Fortunately for every one but the Engineers, the governor chose to surrender. Three officers of Engineers and seventy Sappers are caught. Reid was with the party on the French hospital side on the 13th, and I with the one in the Plaza de Toros gate, where we penetrated on the flanks. The enemy retired from the buildings in no small hurry, the Governor leaving his supper on the table. The three of us have taken up our quarters in the house of the Duchess of Willahamina, and are living in rooms ten times too big for us. Sir Richard Fletcher is coming up immediately."

Burgoyne narrates the same incidents in more detail:—

"August 13th.—Reconnoitre the Retiro early, and afterwards with Lord Wellington. The principal post is the large strong square building called La China, on the summit of the hill, formerly a china manufactory; round this they have a large star fort with a ditch twelve feet deep and twenty-four wide palisaded, but without revetment; round this is an extensive complete line of field work of a similar nature of ten fronts with bastions, and within three of the bastions are buildings—one of them the Observatory, strong and commanding; but neither this line nor the buildings within them appear prepared for defence, having no guns in them, and only a few guards. Round the wall they occupy the park wall and buildings skirting the Prado with flêches to flank the wall; this is, of course, very extensive. Lord Wellington orders them to be driven from this outer line of wall at night, for which purpose a body of 300 men break into the wall and gates above the Retiro and near the gate of Alcala with little opposition, and take post on the skirt of the woods very near their outer bastioned enceinte. Another 300 break through the two walls of the Botanic Gardens with little opposition, and are

under cover equally near the same line, *i.e.* (within eighty yards), under the Observatory. The enemy immediately abandon the strong buildings of the Retiro for fear of being cut off, and retire within their outer line. We have ten men killed and wounded. . . . ."

"August 14th. Arrangements were made, after reconnoitring again with Lord Wellington from the Retiro buildings, for storming the enemy's outer line of works from the Botanic Garden and wood in front of the gate of Alcala, when an officer of rank came out with a flag of truce demanding an interview with Lord Wellington to explain the letter of yesterday. As his Lordship was on the spot he saw the officer, and an opening being made Lord Fitz Roy Somerset went in and settled terms of capitulation, the garrison to march out with the honours of war, lay down their arms, and become prisoners of war, keeping their private baggage and horses, and the officers their swords. At 4 p.m. they marched out, most of them drunk, and affecting great rage against the governor for surrendering. It consisted of 1,700 men exclusive of the sick in the town, and in the fort we found 180 brass guns, chiefly field-pieces, with a large quantity of powder, 20,000 stand of arms, clothing, saddles, and equipments of all sorts (this being their grand depôt), and two eagles."

"August 31st. . . . A grand bull fight is given this evening in honour of our entry into Madrid, and 500 tickets given for the British and Portuguese officers, and 1,000 for the men ; nine bulls killed, and all the four horses engaged wounded—three of them must die. Two of the bulls leaped clear over the paling of about 5 ft. 6 in. clear."

The Siege of Burgos.

The occupation of Madrid by the British army, although a brilliant measure and one that well marked the great successes lately achieved, could not be made secure without further considerable efforts. It was consequently necessary that very bold, and even hazardous action should be promptly adopted. With this view, Lord Wellington determined to advance against General Clausel, who had replaced Marshal Marmont in command of the army of the north. He left Madrid on September 1st, 1812, and driving the French from Valladolid on the 7th, continued the pursuit until Burgos was reached.

Here the French were compelled to evacuate the town, but the castle which commanded it was held by a strong garrison, and it was clear that before any further active operations in the field could be taken it must be reduced. Unfortunately, Lord Wellington was extremely ill provided with the requisites for a siege. In artillery this deficiency was especially conspicuous, the battering train consisting of only three 18-pounder guns and five 24-pounder iron howitzers. The supply of ammunition for even this small park was very limited, and required the utmost economy in its use.

D
CHURCH OF
SAN ROMAN
SUBURB OF
SAN PEDRO.
D
C
THE KEEP
CHURCH OF
LA BLANCA
UPPER LINE
C
D
NAPOLEON
BATTERY
C
MIDDLE LINE
OUTER LINE
B

The engineering strength was also lamentably small. Lieutenant-Colonel Burgoyne, who was the Commanding Royal Engineer, had under his orders only Lieutenant-Colonel J. T. Jones, Captain Williams, Lieutenants Pitts and Reid. To these were added ten officers of the line as Assistant Engineers; eight men of the Royal Military Artificers, and eighty-one linesmen, who were either carpenters, masons, or miners.

The Castle of Burgos occupied the summit of an oblong conical hill, and was enclosed by a triple line of defence, except on one side. The lower or outer trace consisted of the original wall of the castle, supplemented by an earthen shot-proof parapet, flanked by tambours ingeniously constructed at the most effective points. The second line was of a field profile well palisaded, whilst the inner one, which was of similar construction, surrounded the old keep. This had been developed into a strong casemated work called the Napoleon Battery. It also included the church of La Blanca, a solidly constructed masonry building. The natural formation of the ground rendered the post extremely strong, except on the north side, where the hill of St. Michael rose to nearly the same height as that on which the castle stood at a distance of only 300 yards, a deep ravine running between the two hills. This height was occupied by a large hornwork, closed in the rear with stout palisading, its interior being under fire of the Napoleon battery, and its branches flanked from the inner line of the castle.

The project of attack was to capture the hornwork, after which a battery was to be established under cover of some high ground in its left rear. At the same time a communication was to be thrown out from the suburb of San Pedro, and a parallel constructed, sheltered by the steep ground within fifty yards of the outer line. From thence the wall was to be approached by sap as close as possible, and from the nearest point attainable it was intended to mine under it and blow it down. A lodgment having been effected within this enceinte, the other two lines were to be assaulted in succession. Should the garrison still hold out in the keep, a battery was to be thrown up within the hornwork from which it was to be breached.

The operations began with the capture of the hornwork, which was effected on the night of September 19th. The scheme laid down was that a firing party of 120 men should advance on the front of the work, halt at the edge of the ditch, and from that point keep up a brisk fire on the defenders. Meanwhile, two escalading parties were to attack the salients of the right and left demi-bastions, whilst a third should endeavour to penetrate by the gorge over the palisade.

Lieutenant Pitts, with a party of Highlanders carrying ladders,

headed the column of Portuguese troops intended for the storming of the left salient. He and his men descended into the ditch, reared the ladders, and actually mounted them in the endeavour to persuade the Portuguese to follow, but in vain. Nothing would induce them even to enter the ditch, and the attempt had to be abandoned. The escalade of the other salient was equally unsuccessful. Fortunately, however, the party attacking the gorge were able to surmount the palisading and thus to secure possession of the work. A most welcome acquisition of seven French field-pieces was made by this capture.

Jones, in his "Memoirs," is very bitter on the arrangements for this assault. He says:—

"The siege was preceded by the assault of an outwork under an arrangement which no commander but Lord Wellington would have dared to order, and no troops in the world but British troops would have dared to execute; the scheme was neither more nor less than for a party of men openly to march up to the work, halt in line on the crest of the glacis, and then stand fully exposed to fire at and be fired at by men elevated some feet above their heads, and completely covered by the parapet in their front. Colonel Jones's duty led him to move forward with this devoted band, and he was accompanied *en amateur* by Major —— on the general staff. The men behaved like heroes, though sadly thinned; they contrived to advance, gained their point, and commenced firing, but in a few minutes were nearly all annihilated. Major —— fell by his side, and gave him occasion to hear his own funeral dirge from the mouth of an Irish serjeant. 'Arrah by J——, there is the Colonel of Engineers gone, who brought us here, and good luck to him—may his soul lie easy.' Luckily the assaulting columns carried the work, and success glossed over this most unmilitary and inefficient mode of supporting them."

A lodgment was at once begun on the hornwork and connected with the rear of the hill. The proposed battery was at the same time started, and by the 22nd it had been finished and armed, although it was not intended to open fire until the second line was assaulted.

Burgoyne's Journal.—"September 20th. Visited the trenches, and was hit on the head by a musket shot; it was fortunately a distant shot, and of not much consequence."

In the hope of saving time and avoiding the necessity of having recourse to the tedious operation of mining, Lord Wellington determined to attempt the outer line by escalade at midnight on the 22nd. The assault failed, owing to a variety of mishaps, chief of which was the bad conduct of a Portuguese battalion, which had been told off to effect a diversion by an attack on the opposite side. They could not be brought to close on the line, consequently

the main assault was borne down by the resistance of the garrison, who were able to concentrate their whole strength upon it. The French account of the siege says:—

"Cette dernière colonne donna l'assaut avec résolution et fut reçue avec vigueur. Quelques uns des assaillants parvinrent jusque sur le parapet, mais ils furent culbutés et le reste fut mis en fuite par notre fusillade et par des obus chargés que nous roulâmes dans le fosse."

Burgoyne, in his journal, gives the following account of this attempt. It is quoted here *in extenso*, as he afterwards very strongly objected to the arrangements made:—

"September 22nd. . . . At twelve at night assault the lower exterior line without success. The orders given were for Lt.-Col. Browne at ten minutes before 11 p.m. (afterwards put off till ten minutes before 12) to march out of the nearest houses within the old wall with 150 men of his Portuguese detachment, provided with twelve felling axes; they were to keep along the wall, and making their way through the first palisading in a very slight trench, to proceed on to the next line of palisading, which they were also to break through, and then immediately to communicate with a storming party of 400 men of the 1st division, who were to scale the old wall just beyond the above mentioned palisades. This party of 400 men were to shelter themselves in the first instance under a bank about fifty yards from the old wall, and at twelve o'clock they were to push out in the following order: first, the five ladders carried by thirty men, twelve felling axes, and an officer and twenty men. When the ladders were fixed, the twenty men were to mount them, and fifty more from the bank were to follow, and when they were nearly all in the work more men would advance and enter, till they were completed to 200. The other 200 were to cover this operation by a smart fire on the parapet from behind the bank, and were to be considered as the reserve. The work being carried, the 150 Portuguese were to lie down behind the second palisading, which would afford them some cover, and keep a good look out on their right flank on the gateway out of the castle. The 200 men who entered by the ladders were to advance a short way up the hill, and to lie down at the back of some shot piles or other situation, the best they could find, to cover the workmen. The 200 men in reserve were then to form the working party, tools and axes were ready prepared, and they were to make as good a breach as they could in the parts of the line where the wall was very low, and a perpendicular bank of earth with fraises above and a communication to it. This project would probably have succeeded had the Portuguese detachment done their duty, but they never reached even the first line of palisading, and without that support it was impossible the wall of twenty-four feet high could be carried by the five ladders. The firing party did not do their duty either, and the enemy mounted to the top of the wall and fired down into the little ditch with impunity. Neither were the orders obeyed in the other instance, for the 200

storming party nearly all crowded into the ditch. Four ladders, however, were placed and were sufficiently long, and some officers mounted them, but were not followed. The consequence was, that with the commanding officer, Major Lawrie, killed, and four or five officers and 150 men (including the Portuguese) killed and wounded, after about an hour the party retired. Lieut. Reid of the Engineers accompanied this party and fixed the ladders."

Jones, in his Memoirs, gives the following description of Lord Wellington's behaviour on this occasion :—

"The next assault was by escalade, and required bold hearts and strong muscles on the part of the assailants; but it was practicable, and consequently justifiable, although unsuccessful and attended with much loss. It was fixed for midnight or early morning, and Colonel Jones was desired by Lord Wellington to come to head-quarters and let him know the result as soon as the troops were safely lodged. Accordingly, after the failure, he went to head-quarters (a detached straggling building on the edge of the village), and found it without a guard or even a sentry at the door; neither orderly serjeant nor servant could be routed up, and he reached the bedroom door unperceived and, of course, unannounced. He knocked several times in vain; but at length, on lifting the latch and opening the door, a sharp 'Who's there?' greeted his ears. The name being returned, he was desired to enter, and having detailed the miscarriage, and fairly stated that the Portuguese troops had not been zealous or forward, his Lordship broke out violently against them, saying he had stretched every point to give them character, but that in the next dispatch he would represent them as they really were, and bring them down to their proper level. After giving vent to these feelings of indignation, he said 'Good night' as if nothing had happened, and was without doubt asleep again in a few seconds. Policy, however, induced his Lordship to suppress his genuine feelings. Next morning he was as placid and cool as usual in discussing further proceedings, and in the next dispatch the Portuguese were lauded as heretofore. Lord Wellington had certainly a most unusual degree of moral as well as physical courage. In this case he was found sleeping soundly in an exposed and unprotected house, which might have been entered at any moment by any ill-designing persons."

The escalade having failed, it became necessary to revert to the original project of mining and blowing in the escarp. The sap was pushed forward until cover could no longer be obtained, even with a trench six feet deep. During the construction of this sap Captain Williams was shot through the heart on the night of September 24th. This was a severe loss to the Engineers, as their strength was already far too scanty for the work they had in hand. Lieutenant Pitts had been thrown from his horse on the night of the capture of the hornwork, and had broken his arm.

The loss of Captain Williams compelled him to resume his duties in spite of his maimed condition.

Matters, in fact, were now growing very unpromising, and even at this early period of the siege Lord Wellington had become doubtful of success. This is evident from the following letter which he wrote to Lord Bathurst, dated September 27th:—

"We are getting on, but not so rapidly as I could wish, and I wish I could be more certain of final success. It is not easy, however, to take a strong place, well garrisoned, when one has not a sufficient quantity of cannon, when one is obliged to save ammunition on account of the distance of our magazines, and when one is desirous of saving the lives of soldiers. Then nothing in the way of assault can be done excepting by a British soldier, and we cannot afford to lose them at this distance from England and the sea. I shall know in a day or two whether I can take the place and how soon."

Burgoyne's Journal.—"September 26th. The enemy have got good marksmen placed in the palisade tower on the top of the wall, who pick off any one who does not go cautiously through the lower trenches. Captain Kenny, 9th Regiment, and Assistant Engineer, was killed while placing a gabion there."

A gallery was started from the head of the sap on September 25th, and having been driven sixty feet in four days, the miners found themselves under the foundation of the wall. A chamber five feet in length was excavated, and charged with twelve barrels of powder (1,080 lbs.). This was tamped and prepared for springing in the course of the afternoon of the 29th. A storming party of 300 men paraded at midnight. Unfortunately, owing to the casualties amongst the Engineers, they had no one available to lead the assault. The operation had, therefore, to be carried out without their assistance.* When the mine was fired a portion of the wall was thrown down, though the breach was not as large as had been anticipated. The advance party of a serjeant and four men dashed forward, and promptly gained the summit. The officer, however, who was leading the support bore too much to the right, and reached the wall at a point where it was uninjured. Not aware of his error, or that the breach was at the moment in the possession of his advance party, he retired with his men and reported that the mine had failed. During this time, the garrison, having recovered from their panic, and finding that the breach was

* "This was the first assaulting party of a breach which advanced from the trenches in Spain unattended by an officer of Engineers; and it was occasioned by there never having been more than four Engineers present; one had already been killed, one had his arm broken, a third was sick, and it was wished to preserve the other for the daily duties of the trenches."—Jones's "Sieges in Spain," vol. i. p. 297.

being held by only five men, dashed forward and drove them down. The opportunity was thus lost, as before daylight a retrenchment was constructed, and the weak point made secure.

Up to this time the batteries had remained silent, owing to the small supply of ammunition available. The defenders had consequently been permitted to gall the advance from every available point without fear of reprisal, and the trench work had been carried on with extreme difficulty. This had become so trying that at length it was determined to remain no longer silent. There was one stockade in particular, which had proved most objectionable, and against this fire was now opened. The result was all that could be desired. In spite of the efforts of the garrison, who had strengthened the work with sandbags and barrels, it was utterly demolished after three hours' fire.

A second gallery had been begun from the extreme right of the attack, and this was now pushed rapidly forward so as to form a new breach. A small battery was also thrown up to destroy the escarp wall. It was hoped that its position immediately under and close to the outer line would protect it from artillery fire, as that line had no guns mounted, and would screen it from the upper works. As soon, however, as the Sappers began to unmask the embrasures, the garrison brought guns down on to the outer line at points which bore on the battery, and it was speedily crushed. The attempt was renewed on ground more to the left. A number of woolpacks were brought up to form a parapet, and as soon as it was dark on the night of October 1st, 150 men were set to work. Not being discovered, they were able to raise a large mass of cover before morning. In spite of this, as soon as daylight showed what was going on, the enemy concentrated such a fire of shells upon the new work that it was literally blown to pieces. It became, therefore, apparent that it was impossible to establish a battery in such a position.

By October 4th the new gallery had reached the required point. It was therefore charged with the same amount of powder as its predecessor (1,080 lbs.) and prepared for springing at five p.m. The battery outside the hornwork was at the same time brought to bear upon the intrenchment behind the first breach, the intention being to assault the two points simultaneously. At the hour mentioned the mine was fired most successfully, about 100 feet of escarp being thrown down. Many of the garrison who were posted on the spot were killed by the explosion, and a general panic ensued. Both points were promptly attacked, and in each case the stormers succeeded in establishing themselves within the line, the defenders being driven into the next enceinte. Lodgments were at once formed, and connected with the approaches so as to secure

the line from recapture. In this affair Lieutenant-Colonel Jones was severely wounded with a musket ball through his ankle.

He gives the following account of this wound in his memoirs :—

"About half an hour before sunset Lord Wellington desired Colonel Jones to proceed into the trenches, assume the command, and immediately before dark explode the mine, storm the breach, and make a lodgment on its summit, adding, however, that he should not fire the train till after he (Colonel Jones) had taken off his hat, and the signal had been acknowledged by a similar lifting up of his Lordship's beaver. Every arrangement being completed, the storming party being sheltered at the nearest possible point to the mine, with a reserve formed in the parallel in their rear, a little after sunset Colonel Jones ordered the match for setting fire to the train to be lighted, then stepped out of the parallel on its exterior side and made the arranged signal of all being ready by holding up his hat ; no acknowledgment followed. Again and again was the hat held up and waved in the air, unnoticed from without, but not so from within the place. On the signal being a second time repeated he became an object of suspicion to the garrison. He could hear the French officers point him out to their men, and from one or two marksmen there was speedily a whole line of musketeers firing at him from a distance of little more than 100 yards. A kind providence rendered the balls harmless for a far longer period than could have been hoped, but at length one took effect, knocked him over, and with difficulty he rolled himself into the parallel, being still the sport of the French musketeers. A few minutes subsequently an aide-de-camp, who had been long detained in searching for the fords of a river which he had to cross, reached the spot where he lay, with an inquiry from Lord Wellington whether the precaution had been taken of forming a reserve to support the storming party. This question having been replied to in the affirmative, Colonel Jones ordered the mine to be fired, and after a few seconds had the happiness to see the wall rise up, fall over, and form an admirable breach. The stormers from their proximity were in a moment on its summit ; the working party speedily followed and began throwing up cover to enable them to hold their ground. Complete success having thus attended his efforts, and it having become dark, he ordered himself to be carried out of the trenches."*

At five p.m. on the 5th the garrison made a most determined sortie upon the new works, in which they were for a time very successful, doing a great deal of damage, and inflicting a loss of upwards of 150 men killed and wounded. At two a.m. on the morning of October 8th they made another, which was equally damaging to the besiegers, and caused a further loss of 200 men.

* It is evident that Lord Wellington would not give the signal until his messenger (whose passage to the trenches he could see from where he stood) had reached Colonel Jones. He afterwards blamed Jones severely for what he considered a needless exposure of himself, and declined giving him any praise in his despatches in consequence.

Burgoyne's Journal.—"October 5th. Lieutenant Neville, 30th Regiment, assistant Engineer, badly wounded this morning. By the exertions of the working party this day, particularly of the Guards, the parapet was turned, and some excellent communications made by evening. At 5 p.m. the enemy made a sortie from their covert way (which they had cut out along the counterscarp a few days before), and by the gateway at the end of their palisaded line, and rushing down got possession of the first breach, which our people abandoned, and, lining the wall about the breach, commenced firing, while parties destroyed our lodgment within and removed the tools. The parapet on our left of the breach, which had been turned against them, our men maintained, and at one period the enemy were on one side of the lodgment, and ours on the other, with only the parapet between them. Major Arnot, the field officer, commanding, and Captain Clitheroe, of the Guards, jumped on the parapet, and endeavoured to get our men to make a charge over it and attack the enemy who were in the breach in the rear. They were both wounded, being only followed by a few men; they were picked off from the second line. The men—chiefly Portuguese—who had left the breach and were firing from our parallel, were ordered by Lord Wellington to attack the breach again, and ceased firing and formed, but did not advance till the enemy abandoned it. The Queen's had been ordered up to storm the breach again, but when they arrived it was again in our possession. Ensign Twigg, 38th Regiment, assistant Engineer, was wounded severely, being the sixth out of thirteen of the Engineers at this siege killed or wounded.

"October 7th. . . . . The inclemency of the night, added to our usual difficulties in getting the men to work so near the enemy, causes little progress to be made, which is of little consequence, however, as at two in the morning the enemy make a sally from their covert way, upset the thirty men of the covering party who were put under the shot piles in front, surprise the workmen, and everything is in an instant in confusion. The covering party is composed of the German Legion, the working party of Portuguese. The old wall is abandoned, and the enemy line it, and level our works within. Major the Hon. Somers Cocks, a young man, and one of the most promising officers in the army, was field officer of the trenches. He did what he could to preserve the post, and afterwards, when he could assemble the men, he led them to retake it, in doing which he was killed. We obtained possession again, however, probably by the enemy abandoning it after they had effected their purpose of destroying our works. Lieutenant Dumaresq, 9th Regiment, an assistant Engineer, and an excellent officer, was wounded by a grape shot through the thigh, endeavouring to rally our people. He is the seventh of the Engineers and assistant Engineers killed or wounded this siege out of twelve doing duty."

In consequence of these disasters it was decided to attempt no further approaches, but to trust entirely to assaults for the capture of the two inner lines. The battery within the hornwork had for

the last three days been employed against the escarp of the second line at the point where the outer enceinte returned upon it directly under the left corner of La Blanca, and by this time a very fair breach had been formed. On the 9th a new gallery was started by the miners to run under the church of St. Roman. A fire of red-hot shot was also kept up upon the church of La Blanca, with a view to setting it on fire. In this, however, all the efforts of the artillery failed, the solid masonry resisting their incendiary projects. By the 16th the gallery had reached St. Roman, and the mine, charged with 900 lbs. of powder, in readiness to be sprung at the moment of the general assault on the second line. On the previous night Lieutenant Rae, of the Royals, assistant Engineer, was wounded.

Everything being ready, the attempt was made on the 18th, the explosion of the St. Roman mine at 4.30 p.m. being the signal for attack. The breach lately formed by the hornwork battery was carried without difficulty. At the same time a party advanced from the lodgment in front of the original breach and escaladed the second line, within which they established themselves for a time. Unfortunately, the supports did not push forward at either point with sufficient rapidity, the garrison renewed their efforts and drove the stormers back. Thus the advantage was lost and the assault abandoned. The mine under St. Roman was only partially successful, and although the church was evacuated by the defenders, and a lodgment formed within it, no further advance at that point was practicable.

This was the last effort on the part of the British. Lord Wellington perceived the impossibility of carrying his point with the limited resources at his command, and three days later the siege was raised.

Lieutenant-Colonel Burgoyne wrote an elaborate series of remarks on this failure, which are well worthy of record. He commences by enumerating the various engineer means at his disposal, which, as he says, appeared ample, so far as officers were concerned, there being ten assistant Engineers, but owing to the enormous number of casualties, they soon became insufficient for their duties. He had eight Royal Military Artificers who, he says,

"knew nothing that could make them useful, but who certainly behaved with spirit. We had 200 men from the line, to make fascines and gabions, who required to be taught, not one of them ever having seen such a thing before; and I obtained about eighty constant men from the line—miners, carpenters, and masons, all requiring instructions; . . . . our intrenching tools were nearly all miserable country ones too small for men, even when inclined to do much work with them, very easily broken, still easier buried and lost."

He goes on to say that in spite of these drawbacks the place could and ought to have been taken

"if the plan laid down had been steadily and vigorously acted upon, and everyone had done his duty. . . . . I attribute our failure to our feeble efforts in the assaults, to the unfortunate arrangements of some of them, and to an apparent want of confidence and languor in the troops concerned, whose conduct was very different from what I had been before accustomed to witness. I must, however, except the Guards, who for regularity, docility, discipline, and spirit, as shown either in working, covering, or storming parties, were an example to any troops in the world."

It must be remembered that the bulk of the troops employed were Portuguese.

He then complains of the distaste of the British soldier for work as distinguished from fighting:—

"It was seldom the men could be induced to take out their own gabions and set to work, and I have myself placed at different times hundreds of gabions with my own hands, and then *entreated* the men to go and fill them to no purpose. . . . I had an opportunity of pointing out to Lord Wellington one day a French and an English working party, each excavating a trench. While the French shovels were going on as merrily as possible, we saw in an equal space at long intervals a single English shovelful make its appearance. We could not get a *dozen* gabions filled in one day. Our musketry fire kept up by the covering parties, of whomsoever they might happen to be composed, was noisy, wasteful, and ineffective; while the French kept a small number of steady men, who fired well, and never but at a fair object. Every gabion we placed at the full sap had ten or twenty shots through it, and an extraordinary number of our foolish firing parties were shot in the head by one unobserved Frenchman, while their attention was purposely engaged by another."

After alluding to the numerous projects submitted to Lord Wellington in opposition to that which was being adopted, Burgoyne proceeds:—

"I treated them fairly, and pointed out coolly my objections, and how I thought the other plan better, which I could do with the more decency, as I called the one adopted Colonel Jones's, because while we were reconnoitring that side, having settled it to be the weakest, he sketched out a project of attack, which, with some little variations, I proposed to Lord Wellington as his."

But the main point on which Burgoyne laid stress as the cause of the failure in so many of the assaults, was the mode in which they were directed to be carried out. In a previous page, one of these orders has been quoted somewhat fully; and this is what he says on the subject:—

"Another strong objection of mine was to the manner of the attack."

After repeating the system adopted, which has been referred to, he goes on :—

"By this mode the first small party has in fact to take the work by itself, without the encouragement of a close and strong support; and if they do not succeed, the next party, who coolly from behind their cover see them bayoneted, are valiantly to jump up and proceed to be served in the same way. The argument in its favour (as stated to a hint I gave for a contrary mode) was, 'Why expose more men than can ascend the ladders or enter the work at one time, when by this mode the support is ordered to be up in time to follow the tail of the preceding party close?' My answer is, because large bodies encourage one another, and carry with them the confidence of success, because there is more chance of a few very brave men to lead, and because although we had but ten or twelve ladders to storm the castle of Badajoz, and, therefore, not more than forty or fifty men could mount at once, I am convinced it was only carried by the whole third division being there, and the emulation between the officers of the different regiments to get their men to mount; and although we lost 600 or 700 men it caused success, which eventually always saves men. It was, however, by the faulty mode pointed out that all our assaults at Burgos were ordered; and with the miserable, doubting, unmilitary policy of small storming parties, because then 'if we fail we can't lose many men,' caused us, in my opinion, more mischief throughout, more losses, and gave the enemy great confidence."

Lord Wellington, in his despatch to Earl Bathurst, stated :—

"The officers at the head of the Artillery and Engineers' departments, Lieutenant-Colonel Robe and Lieutenant-Colonel Burgoyne, rendered me every assistance, and the failure of success is not to be attributed to them."

Burgoyne evidently considered that this was not a mere figure of speech or an empty compliment, as he adds :—

"I have heard a hint that Lord Wellington said that the Engineers told him 'the fort might be taken without guns.' This I do not believe. First, because it is not like him to say that he went by other people's advice, but chiefly because I never said any such thing, as I thought that even the little artillery we had might have been of service. I do not know what his Lordship's opinion may be now, but he certainly appeared all through the siege perfectly satisfied with me, and with the exertions of the Engineer department; and although he occasionally listened to some project or other that was put into his head by other people as an accompaniment to the attack, for a general plan he always declared his approbation of mine."

Lieutenant Pitts gives the following account of his experiences at this siege :—

"Returning home from the trenches the first night" (*i.e.*, after the assault on the hornwork), "my horse fell with me, and I broke the small

bone of the right arm close to the wrist, which laid me up till the morning of the 25th September, when I took Williams's duty, he being killed. Colonel Jones was shot through the ankle, and a severe wound it is; but the leg is doing well, and the fears entertained of him are from the very reduced state of body he is in. Reid was taken ill, and did little duty after 1st October, so Burgoyne and myself were the only remaining *real* Engineers, as a soldier called us, to distinguish us from the Assistants. Burgoyne got a lick on the head with a spent musket ball, from which he recovered in a few hours, and has the honour of his clothes being pierced. The failure of this extraordinary siege is certainly in the main to be attributed to the want of sufficient Artillery, and also for the want of Sappers and Miners. Had we had the first, as it was, we should have taken the place; but we should have been greatly assisted by having good Sappers and Miners. They would have worked more scientifically and with more rapidity than the men we had, who were chiefly from the Guards. They behaved very well, but experience was wanting. From want of a sufficient number of officers of Engineers we had many Assistant Engineers; but these, though their conduct deserves every praise, are very lame substitutes for our own officers."

Of the five Engineers employed at the siege, one was killed, one severely and one slightly wounded. Of the eight R.M. Artificers, one was killed, and the other seven were all wounded.*

After raising the siege of Burgos, Lord Wellington retired leisurely into Portugal, and the troops were placed in their winter cantonments, every preparation being made during the winter for the renewal of the campaign in the spring. Events were occurring at this time which foreshadowed much brighter prospects for the British arms. The disastrous retreat of Napoleon from Moscow had so shattered the military power of France, that it was only by extraordinary efforts she was enabled to oppose an adequate resistance to the advance of the allies from the eastward. It was therefore clearly impossible that the French armies in the Peninsula could be strengthened. On the other hand, the British Government, feeling that the time had now arrived for striking a decisive blow, strained every nerve to increase Lord Wellington's force. The campaign of 1813 opened, therefore, under much brighter auspices for the allies, and Wellington was not slow to take advantage of his improved position.

Burgoyne's Journal.—"Feb. 7th, 1813. . . . In talking over the general arrangements of the corps for the ensuing campaign, his Lordship agreed it would be advisable to attach officers of Engineers to the different divisions of the army, and said they might be very useful in a thousand instances. 'There was Burgoyne,' said he, 'in the 3rd Division, always

* Conolly, vol. i. p. 187.

took the command of the Portuguese. After the business at El Boden, Marmont told my aide-de-camp, who went in with a flag of truce, that he observed we were forced to attach a British officer to encourage the Portuguese regiment on that day and keep it to its duty, and that was Burgoyne.' . . . This business of El Boden was on the 25th of September, 1811, and Lord Wellington himself was present. Our small force retired for six miles across a plain, in presence of a much superior body of the enemy, particularly cavalry. There being some difficulty in moving the 21st Portuguese Regiment, I volunteered to interpret to them all orders and regulate their movements; and ultimately, the Portuguese colonel being an inactive old fool, I took complete command of the regiment through the day. They were frequently threatened but never absolutely charged, though it would appear by Marmont's observation that he particularly watched for an opportunity against them, as the part on which he was most likely to make an impression. Lord Wellington appeared very well pleased at the time" (as a matter of fact, he thanked Captain Burgoyne publicly on the field for his good services that day); "but I imagined it was all forgotten. This remark of Marmont's, however, appears to have fixed it in his memory as a point in my favour.

"April 21st. Sir Richard Fletcher returned to this country from leave of absence in England. The four companies of Sappers and Miners, with four sub-lieutenants (about 200 in all), move with head-quarters, and 100 mule-loads of stores, including 1,000 entrenching tools, and other stores in proportion."

In the middle of May the army broke up from its cantonments, and advanced into Spain. Much difficulty was experienced in establishing a pontoon bridge across the Esla, owing to the steepness of its banks; but under the guidance and control of the Engineer officers the work was satisfactorily accomplished without causing any delay in the movement of the troops. Detachments were left behind to guard and work the flying bridges formed on the Douro and Esla, the main strength of the Companies advancing to rejoin the army. They did not, however, overtake it until the very day of the battle of Vittoria—too late to take any part in the action. A Company which was attached to the light division was employed under Lieutenant Matson to repair the broken arch of the Toro bridge. This Company, having performed that duty, hurried forward and reached Vittoria in time to be present at the battle.

Burgoyne's letter to his sister, June 23rd, 1813—

" . . . . We have had another fight, and *of course* gained another victory. The day of the 21st was very brilliant. We drove the enemy in all directions, and he showed even an unusual degree of want of confidence, for in but few instances could our people get near enough to come in actual contact with them. The 3rd Division had been before kept very much in the background" (Bur-

goyne was once more attached to the 3rd Division), "for Sir Thomas Picton is by no means a favourite with Lord Wellington; but when it came to a day of action we passed all our competitors, and certainly had the most arduous and forward situation in the field by the promptitude and energy of my friend General Picton. It was very pleasant and gratifying to have in several instances in the course of the day messages from Lord Wellington to do the very things General Picton had previously ordered, and which were absolutely in execution. My poor horse (well known in the army for my attachment to him from having done the whole of my work for three years) was wounded under me in three places; and while I was lamenting the loss, and particularly the want of a horse at such a time, to a friend of mine in the artillery, he, poor fellow, was knocked off his, which I mounted, after seeing the master safe with a surgeon and attendants. My own horse, I am happy to say, is likely to recover.

. . . . "We are now approaching Pamplona, a very strong fortress, where I trust we Engineers will have some professional operation to undertake."

In his journal Burgoyne gives a description of the battle, from which the following is an extract:—

"The front was attacked chiefly by the 3rd Division, and forced repeatedly, and in every part the enemy kept fighting and retiring all day. They showed little confidence, and seldom allowed our troops to come very near them. We marched over their guns by twos and threes and tens and twelves. At length, when passing the city of Vittoria, their retreat became rapid, and about that place and beyond it the great mass of their artillery and baggage and military chest was taken."

The Engineers present at the battle were—Lieutenant-Colonels Sir R. Fletcher and Burgoyne, Captains Ellicombe, Goldfinch, and C. F. Smith, Lieutenants Gilbert, H. D. Jones, Marshall, Matson, and Reid. Lieutenant H. D. Jones distinguished himself so greatly on this occasion that his name was specially brought forward by the General of the Division to which he was attached.

The result of the action was so decisive a victory that the French were practically driven out of the Peninsula. Two important fortresses on the frontier alone remained in their possession—Pamplona and San Sebastian. These were left strongly garrisoned, and with instructions to hold out to the uttermost, it being hoped that the retreating army might, after crossing the Pyrenees, receive sufficient reinforcements to resume the offensive. Not being able, with the resources at his command, to undertake the siege of both fortresses simultaneously, the Marquis of Wellington (he had received the title for his victory at Vittoria) decided to blockade the former, whilst he attacked the latter by siege.

This blockade was at first entrusted to Lord Dalhousie, with two divisions of infantry; whilst the rest of the army pushed forward to occupy the passes of the Pyrenees, so as to prevent the return of the French. To strengthen the front of the investing force, Sir Richard Fletcher traced nine redoubts, to contain garrisons of from two to three hundred men each, on commanding points around the fortress at a distance of from 1,200 to 1,500 yards from the enceinte. These were thrown up with the utmost promptitude, the peasantry of the country supplying the greater part of the labour. When completed they were armed with the French field guns that had been captured at Vittoria.

Sir Richard Fletcher being at this time summoned to San Sebastian, to undertake the duties of Commanding Royal Engineer, at the siege of that fortress, Major Goldfinch took over charge of the construction of these redoubts, assisted by Captain Pitts, who makes the following observations thereon in his letters:—

"You must not quiz, but a shell came into the redoubt the other day, and sent the stones flying in a fine way, one of which caught me *behind*. However, it is nearly well, and I am again *able to ride*, though at first a *soft cushion* was very acceptable. Pasley's sappers are most valuable and generally extremely zealous."

This is the last record we have of poor Pitts, who was killed before Hastingues whilst accompanying his General in a reconnaissance of that place on February 23rd, 1814, he being almost, if not quite, the last Engineer to fall a victim to his duty during the Peninsular War.

The following letter, written by Lieutenant-General Sir Lowry Cole to Lieutenant-Colonel Burgoyne, just after the close of the siege of San Sebastian, evidently was in praise of Captain Pitts' services:—

"Lesaca, Sept. 24th, 1813.

"My dear Burgoyne,

"I enclose you the letter you required respecting your friend Pitts, which I have written as if to poor Fletcher" (he had just been killed) "who had written to me on the subject, and have done it so as to appear as if it came from myself without the suggestion of others. Independent of my regard for Pitts, I shall feel great pleasure at all times in doing justice to a corps throughout the younger branches of which there is a spirit that no other corps I know of possesses to the same degree.

"Most truly yours,

"J. Lowry Cole, Lieut.-General."

The blockade of Pamplona was in every way successful, the redoubts were so judiciously placed and the vigilance of the investing force (during the latter portion of the operation a

Spanish Division) so unceasing that no single communication of any kind passed between the garrison and the force under Marshal Soult, which was manœuvring for their relief, and which for three days at the end of July was almost within sight of the walls. At length, on October 31st, starvation compelled the Governor, Baron Cassan, to capitulate, and the fortress fell into the hands of the allies.

Burgoyne's Journal. "June 26th. The enemy have left 600 men in Pancoroo, near which is O'Donnell's Spanish corps. Lieutenant Stanway, of the Engineers, is gone to join him to assist to reduce it. No guns can be spared, but it is thought that the town may be gained, and then that the water may be cut off from the castle.

"July 14th.—The siege of St. Sebastian being commenced, I set out with Sir R. Fletcher for that place."

Sta Clara
a
Monte O
Convent of Sta Theresa
Drain & Mine
Suburb
a Redoubt
Convent of San Bartolomeo

CHAPTER XIV.

1813-1814.

Description of San Sebastian—Project of Attack—Commencement of Siege—Capture of Convent of San Bartolomeo—Reid's Train—Explosion of Mine and General Assault—Jones Wounded and taken Prisoner—Failure of the Assault—Suspension of the Siege awaiting Ammunition—Resumption of Active Operations—Development of the Attack—Capture of the Island of Santa Clara—Swimming Feat of Corporal Evans—Second Assault—Critical Moment—Fire on the Ramparts over the Heads of the Stormers—Success of the Assault—Losses of the Engineers—Bombardment of the Castle—Its Surrender—Burgoyne's Criticisms—Memorial from the Officers of Royal Engineers about their Allowances—Passage of the Adour—Difficulties of the Undertaking—Design of the Bridge—Organization of the Flotilla—Crossing of two Brigades by Boats—Formation of the Bridge.

Whilst the blockade of Pamplona had been carried on as described at the close of the last Chapter, the main efforts of the British and Portuguese army had been devoted to the prosecution of the siege of San Sebastian.

That fortress was situated on a low peninsula jutting out into the sea, and joined to the mainland by a narrow isthmus. The town occupied the entire breadth of the peninsula, and was surrounded by a fortified enceinte. The line on the south, or landward side, consisted of a long curtain of considerable command, flanked at each extremity by a demi-bastion of lower relief, in addition to which there was a lofty cavalier bastion in the centre. In front of the curtain was a large hornwork with a ravelin, the whole enclosed by a covert way and glacis. The north, or seaward face of the peninsula, rose to a considerable height, protected by steep cliffs, and was called Monte Orgullo. Its summit was occupied by the Castle of La Mota, works on either side cutting off the hill and making it a strong citadel, capable of defence after the town had fallen, the difficulty of any attack on it being very great. The east and west sides of the fortress consisted of simple escarps, washed on the right by the sea, and on the left by the river Urumea. These were poorly flanked; that on the left or eastern side having only two semi-circular projecting towers along the line of escarp, and a short flank in the battery of St. Elmo, at the north-

eastern corner of the enceinte. Along this side the water receded at low tide for some distance from the foot of the wall, leaving an access thereto from the isthmus. At the neck of the peninsula was the height of San Bartolomeo, occupied by the convent of that name. This had been fortified, and a redoubt thrown up in its front connected with it, thus forming the advanced post of the garrison.

On the right bank of the river were the Chofre sandhills, a series of mounds, from which the escarp on the other side of the river was visible to its foot. Farther to the north the ground rose to a considerable elevation, called Monte Olia, from which many of the ramparts could be seen in reverse.

The scheme of attack was extremely simple, though somewhat audacious. It consisted first in capturing the redoubt and convent of San Bartolomeo, and then in constructing batteries on the Chofre hills. When practicable breaches had been established in the exposed escarp, assaulting columns were to advance by the isthmus along the right side of the peninsula and storm the enceinte, the fire of the place being kept under by the superior weight of metal in the batteries. The scheme contemplated only an *attaque brusquée*, it being hoped that after so many serious disasters the French would probably not retain the energy to offer any very serious resistance. This project, which followed somewhat on the lines of Marshal Berwick's siege in 1719, was drawn up by Major C. F. Smith, the senior officer of Royal Engineers on the spot, who was acting temporarily as Commanding Royal Engineer. It was sanctioned by the Marquis of Wellington, and ordered to be carried out under the direction of Sir Thomas Graham, to whom the conduct of the operations was confided.

The following Engineer officers eventually took part in this memorable siege:—Lieutenant-Colonel Sir R. Fletcher, C.R.E., Lieutenant-Colonel Burgoyne; Majors Ellicombe and C. F. Smith; Captains Henderson, Rhodes, G. C. Lewis, Boteler, and Collyer; Lieutenants Stanway, H. D. Jones, Marshall, Barry, Tapp, Reid, Matson, Machell, and Wortham. Under them were at first three and afterwards four Companies of Royal Sappers and Miners, which with detachments from other Companies consisted of four sub-lieutenants and 305 rank and file. No assistance was on this occasion called for from the line, except some carpenters to lay the gun platforms, and later on a few miners.

Ground was broken on the night of July 11th, when two batteries, which were to act against the convent at a range of 200 yards, were begun on the isthmus. Two nights later three others were started on the Chofre hills, intended to breach the escarp facing the river at a distance of some 600 yards, whilst a

fourth on Monte Olia was to take the works of the town in reverse from a distance of 1,300 yards. The river Urumea being between these batteries and the fortress, it was not thought necessary to have any supporting parallel, simple connecting trenches being thrown up between them with communication to the rear at Passages.

The batteries on the peninsula were completed, and armed during the night of the 13th. On this occasion the first Engineer casualty of the siege took place, Lieutenant Tapp being severely wounded whilst superintending the opening of the embrasures. At daybreak on the 14th, they opened fire, and continued to pour hot shot, shell, and carcasses into the convent until the morning of the 17th. By this time the building was almost in ruins, the garden wall breached, and the redoubt silenced. At 10 a.m. the work was stormed and carried with but little resistance, the defence having been completely crushed by the heavy and continuous fire of the preceding three days. The redoubt was at once remodelled so as to be open to the attack, whilst the parapet on the town side was strengthened.

The enemy being driven away from the height, two new batteries were constructed on its summit, to the left of the convent, in a position which gave them great command over the land front, and from whence many of the defences could be enfiladed or taken in reverse. Two others were at the same time thrown up on the Chofre hills. When these were armed, the battering power brought to bear against the river front consisted of seventeen 24-pounder guns, four 68-pounder carronades, and four 10-inch mortars, in addition to two 24-pounders and four 8-inch howitzers in the battery on Monte Olia. Most of these guns were mounted and at work by the 20th, and the remainder by the 23rd.

The suburb of San Martino in front of the convent having been burnt and abandoned, it was occupied by the besiegers, and a lodgment made in it with a communication to the rear. On the nights of the 20th and 21st a parallel was thrown up right across the peninsula, considerably in advance of this lodgment, with which it was connected.

Burgoyne's Journal.—"July 22nd. Lieutenant Reid, observing the drain of the aqueduct, where it was cut through in our parallel" (the one just referred to), "to be large enough to get into, explored it; and with much difficulty and perseverance went completely through (240 yards) to where it ended in a fastened door in the counterscarp, opposite the face of the right demi-bastion of the hornwork, into which, through chinks in the door, he was enabled to look. The ditch appeared narrow, the escarp about twenty-four feet high, the drain on the level of the bottom of the ditch. It was determined, in consequence of this discovery, to

make a globe of compression in this drain, and endeavour to force earth enough from the counterscarp and ditch to form a ramp up the escarp of the hornwork. Lieutenant Reid, assisted by Lieutenant Matson, is directed to take charge of the arrangement of this mine." "July 24th. . . . The mine was all loaded ready, but not tamped, in consequence of the difficulty caused by the great length of so confined a gallery, and from want of air, which began now to be experienced. The powder was put in barrels; the gallery would only contain two on their sides, and then one on its end, and so on alternately; the length occupied therefore by the thirty barrels was very great. . . . It is understood by information from the place that the enemy's interior defences are thus:—The town front is very high, it is casemated, and the interior a high perpendicular wall; the ends are cut off by traverses and ditches, and all the ramps and steps of communication up it cut away, the interior parapet wall completed for firing over with sandbags, makes the whole one enclosure of difficult access, and brings a fire up all the long streets, the town being very regular. One corner of the town is also entrenched, covering the *debouché* up to the castle and including the great square."

The batteries on the Chofre hills were worked with extreme vigour, and by the evening of the 23rd one main and two minor breaches were rendered practicable; the former being between the two towers, and the others on either side beyond them. It was originally proposed that the assault should be delivered on the morning of the 24th; but there seemed to be so many houses in flames in rear of the principal breach, that at the last moment the operation was postponed till the following day, to allow time for the conflagration to subside.

It was decided that the signal for the assault should be given by the explosion of Lieutenant Reid's mine, which was to take place at dawn on the 24th. By this time it was calculated that the tide would have fallen sufficiently to allow of the columns passing from the right of the parallel on the isthmus round the flank of the hornwork to the breaches. The operation was one the difficulties of which could hardly be overrated. The distance the stormers had to traverse was fully 300 yards, the surface of the ground being much broken up by rocks, pools, seaweed, and other impediments. These obstacles would prevent any regularity of formation during the advance. The column would, moreover, be all the time exposed to a withering fire from the ramparts, both of the hornwork and main enceinte, as well as from the towers and flank of St. Elmo, whilst the breaches themselves were strongly retrenched. On the other hand, it was hoped that the Chofre hill batteries, as well as those on the peninsula, would bring so heavy a fire to bear on the ramparts as would prevent the garrison from offering any very determined resistance.

The mine was exploded precisely at 5 a.m. according to Jones,

the day not having as yet dawned; Burgoyne says 4.30 a.m. This was, undoubtedly, the first error committed. So much had been trusted to the effect of a close fire from the besiegers' batteries, that it was most important they should be able clearly to make out the points against which their fire was to be directed. Moreover, at that hour the tide had not receded sufficiently to afford a free and easy passage to the columns in their advance. Had the signal been given half an hour later, the result might have been widely different. As it was, the explosion of the mine, which blew in a large extent of the counterscarp, created such a panic amongst the defenders of the hornwork, that its left branch was temporarily abandoned. The leading column of stormers, under Major Frazer, of the Royal Scots, guided by Lieutenant H. D. Jones, R.E., was in consequence able to reach the foot of the escarp without having suffered much from the enemy's fire. The men at once dashed at the breach, and succeeded in forcing their way to its summit, driving the enemy back into the ruins of the burnt houses in rear. Frazer and Jones, with some of the most intrepid of the party, followed them, scrambling down into the still burning mass.

As, however, was so frequently the case in these assaults, the supports were not sufficiently prompt in their advance. In a few minutes, the defenders, realizing the weakness of the force to which they had yielded, were rallied by their officers, and poured a most destructive fire upon the handful of men in their front. At this critical juncture Major Frazer was killed, a casualty which naturally threw his men into confusion. Many in consequence beat a retreat; and although Jones stood undaunted on the breach, he was only able to retain with him a few others as determined as himself. This gallant little knot strove vainly to establish some kind of cover, behind which they might hold their ground until the advance of their supports. Before they had time to accomplish this, he and most of his party were shot down. The garrison then returned to the breach and carried them prisoners into the town. When the supports at length tardily arrived, they were met by the retiring remnant of the first column, and after discharging a few rounds of musketry, they also fell back without having made an attempt to mount the breach.

A third column had been told off to storm the small breach which lay beyond the first. As this party had a longer distance to travel, and as there was not space for the columns to move on parallel lines, they should naturally have been in front. Instead of this they were in rear, and so, becoming involved in the general confusion, they retreated without having ever reached the point of attack.

In this disastrous affair Lieutenant Machell was killed, and Sir

R. Fletcher, Captain Lewis, Lieutenant H. D. Jones, and Lieutenant Reid were wounded; Sergeants Powis and Davis, of the Royal Sappers and Miners, who were with the stormers, had been driven down the breach with the retiring party. Perceiving, however, that Captain Lewis was lying badly wounded and helpless under the enemy's fire, they returned; and although Davis was himself wounded in the arm, they succeeded in carrying Lewis back to the trenches. In doing this Davis received a second wound, by which he lost an eye.*

Burgoyne's Journal.—"Lord Wellington came to the other side of the river about 2 p.m., and immediately sent for Sir Richard Fletcher, who, not being able to go, sent me. His Lordship seemed determined to persevere, talked of opening the breach more extensively on the left, said he expected much more heavy artillery, and demanded a project attacking the place in front regularly."

There was much angry discussion and recrimination as to the causes of this failure. No doubt one, and possibly the most important, element in the disaster was the premature firing of the mine before day had fairly dawned, or the tide sufficiently receded to afford a convenient roadway. The artillery in the Chofre batteries were utterly unable to render any efficient support, and it was not until after the troops had returned to the trenches that there was sufficient light to enable them to see what had taken place. A very general opinion prevailed that the assaulting columns had not shown their usual intrepidity. Unquestionably, the supports hung fire in a most inexplicable manner, and it was left to a mere handful of brave men to hold the advantage gained at the first onset until they were nearly all shot down. Murmurs were heard that the breach was not sufficiently practicable. This was certainly not true. Not only did the leading stormers ascend without difficulty, and penetrate into the ruins in rear, where many of them were killed or wounded, but Lieutenant Jones specially records that he was easily carried up the breach, wounded and helpless, by four French Grenadiers.

Sir Thomas Graham, in his report to Lord Wellington, acquitted the assailants of any want of vigour. He stated—

"Though this attack has failed it would be great injustice not to assure your Lordship that the troops conducted themselves with their usual gallantry, and only retired when I thought a further perseverance in the attack would have occasioned an useless sacrifice of brave men."

On the other hand, Lord Wellington seems to have had his doubts on the subject, since he called for a body of volunteers from the various regiments to form the assaulting parties at the next storm.

* Conolly, vol. i. p. 195.

After careful investigation Lord Wellington found that the supply of ammunition was too much reduced to admit of the immediate prosecution of the siege. It was, therefore, decided that a pause should be made until the arrival of additional supplies from England. In the meantime the trenches were to be guarded, but the guns withdrawn from the batteries and taken to Passages. The garrison, encouraged by these measures, made two powerful sorties, evidently with a view to ascertain whether the suspension of active operations betokened a definite abandonment of the siege. In one of these sallies they succeeded in carrying off 200 Portuguese troops as prisoners into the town.

Advantage of the pause was taken by the Engineers to push on some countermining work, ostensibly to guard against supposed mining advances on the part of the French, but really more with a view to the training of a body of miners who had volunteered from the line to be ready for future contingencies.

On August 19th the fresh guns and stores began to arrive from England, and by the 23rd the siege train was once more in a state to resume the offensive. At the same time an additional company of Royal Sappers and Miners (the Second Company of the Second Battalion) landed. This was the first company that wore the new scarlet uniform, and that had undergone the training at Chatham then recently instituted by Major Pasley. They were consequently known during the siege by the soubriquet of Pasley's Cadets. It was not long before they were able to show the value of the instruction they had received. Captain Collier and Lieutenant Wortham landed with this company.

The siege train having been so materially strengthened, two new batteries to contain thirteen guns were thrown up in advantageous positions on the isthmus, to breach the left demi-bastion of the land front, and the high curtain above it, whilst on the Chofre hills the existing batteries were augmented to the extent of twenty-one 24-pounder guns, seven 8-inch howitzers, howitzers, four 68-pounder carronades, and sixteen mortars. These additions were begun on August 24th, and on the morning of the 26th fire was opened from forty-two pieces of ordnance on the right attack and fifteen on the isthmus. Whilst the latter were breaching the left demi-bastion of the land front, the former were to destroy the two towers and to extend the existing breaches so as practically to ruin the entire length of the escarp as far as the salient of the demi-bastion. On the following day an additional battery for four guns was begun at the right of the parallel, on the isthmus in front of the ruined houses of the suburb.

On the same night a detachment of 200 men, commanded by

Captain Cameron, of the 9th Regiment, was embarked in the boats of the blockading squadron. They were accompanied by Captain Henderson, R.E., who was to direct the operation of capturing the island of Santa Clara, off the entrance to the harbour, on which the garrison had established a post. After some resistance this was successfully accomplished with slight loss. In the affair, Lieutenant Chadwick, an Assistant Engineer, was wounded. As the island was in a position to enfilade and take in reverse the main defences of the Castle, it was decided to establish a battery there for five 24-pounder guns, and an 8-inch howitzer. The French were much dismayed at the loss of the island, a calamity which they had not in the least anticipated, owing to the steep and rugged cliffs by which it was surrounded. So safe did they consider it that only one officer and twenty men had been posted there; these were, of course, taken prisoners. The Governor, in his report on the event, stated—

"The enemy, by establishing a battery on this rock will cause us heavy losses, as even his musketry will prove very fatal to us. If we are compelled to retreat into the castle, we shall suffer much from it, as we shall be unable to throw up cover owing to the absence of earth."

In connection with the capture of this island, a gallant feat is recorded, of which Corporal Thomas Evans, of the Royal Sappers and Miners, was the hero. It became necessary to make an immediate communication to the officer of Engineers on the island, who was superintending the construction of the battery. Being broad daylight no boat could venture to cross the bay without drawing down so heavy a fire as to ensure its destruction. In this dilemma Corporal Evans volunteered to swim to the island. He at once stripped, and tying the despatch round his neck, plunged into the river. In spite of a heavy musketry fire from the Castle he reached the island unhurt, a distance of nearly a mile, and in about an hour's time returned with the reply.*

For the next four days the batteries were kept in full play, and by the 30th the breaches presented every appearance of being ready for assault. That opposite the Chofre batteries was almost continuous for a length of nearly 500 feet, the two towers being utterly demolished, whilst the face of the left demi-bastion and the high curtain behind it were also brought into a ruinous condition, forming one continuous roadway by no means difficult of ascent. At 3 p.m. Lord Wellington made an inspection, and decided that the assault should take place at 11 a.m. on the following day (August 31st).

A sap had been pushed forward from the parallel on the isthmus,

* Conolly, vol. i. p. 196.

as far as the foot of the glacis of the hornwork, and from this spot it was determined to blow in the sea wall on the right, so as to allow of the easy debouching of the storming columns from a point considerably nearer their destination than was possible on the former occasion. For this purpose three shafts were sunk, one close to the back of the sea wall, which was about four feet thick; the second twenty-five feet behind it, and the third forty feet still farther to the rear. The object was not only to blow down the wall, but to create a trench up to the breach, which was to be formed by the firing of the front mine. These mines each contained 540 lbs. of powder, and at 2 a.m. on the 31st they were exploded simultaneously. The result was most satisfactory; the sea wall was completely thrown down; a good opening created for the passage of the troops, and cover for a connecting trench made by the craters of the two rear mines.

The scheme of assault laid down was, that it should be made on two points. The first column, as on the former occasion, was to attack the main breach, on which they were to effect a lodgment as soon as they had driven back the defenders. The second point was to be the left demi-bastion, with its high curtain. As soon as this latter had been gained the stormers were to turn to their left and push on to the cavalier in the centre, from which commanding position they would by their fire be able to drive the enemy out of the hornwork. This was then to be taken possession of and connected with the advanced trenches. At the same time a diversion was to be made in rear of the Castle by a party embarked in the boats of the squadron. This was not intended to be serious, nor was it in any way pushed. As was afterwards made evident, it would probably have been successful had any real effort been made, and if so, would have involved the fall of the town in that of the Castle. What would have greatly facilitated the attack at this point, was the fact, not at the time known to the besiegers, that all the prisoners were lodged in the Castle. They would have afforded much assistance by the difficulty their mere presence must have caused to the small garrison in the place.

The assault was delivered at the appointed time, being about an hour before low water. At this period there was ample room for the advance of the columns along the strand between the receding river and the works of the place. Directly the leading stormers debouched from the trenches, two mines were exploded by the garrison at the salient of the covert way in front of the left branch of the hornwork. Here a glacis coupé had been constructed, with a retaining wall, and this was thrown down, burying some twenty or thirty of the assailants. The existence of these mines was strongly suspected, and efforts had been made on the previous day

by means of a false attack to induce the enemy to explode them prematurely, a trap into which they were too wary to fall. As it was, a serjeant and twelve men had volunteered to dash into the covert way on the first signal for assault, and from thence to jump into the ditch and endeavour to cut the train by which the mine was to be fired. It was their rush which caused the explosion to be made so far too soon that the main body had not reached the spot when it took place. All the gallant volunteers were, however, involved in the catastrophe.

In spite of the explosion, and undeterred by the terrific fire which poured upon them from every point of vantage, the stormers dashed onwards with the utmost gallantry. That portion which was directed against the main breach attained the summit successfully, and in very good order, having driven the enemy back in confusion. Here, however, they found that a strong retrenchment had been formed amongst the ruins of the houses in rear, and from this such a close and destructive fire of musketry was poured upon those of them who had gained the crest that the foremost ranks were mown down almost to a man. Moreover, between the breach and the ruins there was a perpendicular retaining wall of from fifteen to twenty feet in height, forming the rear of the rampart, and at the foot of this was ranged every conceivable species of obstacle. All lateral communications along the rampart had been cut off, so that the only possible method of attacking the retrenchment, or of reaching the town, was by climbing down this retaining wall.

The attack on the demi-bastion and high curtain seemed at first to promise less difficulties. Here, also, however, a powerful defensive traverse had been formed to sweep the crest of the breach at a distance of not more than fifteen yards. From behind this work the defenders shot down everyone who reached the summit. Meanwhile, the mass gathered at the bottom of the ascent was exposed to a close fire from the left branch of the hornwork. In vain the Sappers who accompanied both columns strove to throw up cover on the breaches. The fire was so close and so unerring, that all such attempts only led to the sacrifice of the brave men engaged in them.

Although thus checked on all sides, there seemed no idea of retreat. Fresh troops were poured forward to take the place of those who had fallen, until at length more than half of the fifth division, as well as the whole of the 750 volunteer stormers who had answered the call of Lord Wellington, were engaged in the attack. Upwards of an hour had now been spent in the vain hope of wearing out the defence, and at length it seemed likely that the rising tide would compel an abandonment of the attack. At this moment, the tide having just turned, two columns, one of Portu-

guese, and the other British, were ordered to ford the river from the right attack and support the assault.* This they did in very gallant style, under a heavy fire of grape and musketry, and made a dash at the far extremity of the long breach. Here they met with the same resistance as the preceding columns, and all efforts at penetrating the defence seemed futile.

It was now plainly evident that unless some further assistance could be rendered to the attack, and that speedily, it was bound to fail as signally as at the first attempt. If there were one point less invulnerable than another it was the high curtain, and Sir Thomas Graham directed that the whole of the artillery on the Chofre sandhills should be brought at once into action to sweep the curtain and the ground in its rear. In order to do this the shot must pass immediately over the heads of the stormers at a range of from 600 to 800 yards. It seemed to be calling for almost more than human steadiness to expect men to stand tranquilly by whilst the storm of iron was passing so closely above them. The thing was done, however, and it is equally to the credit of the stormers and the artillery that not a man flinched, and not a casualty occurred amongst them from an ill-directed shot. In a very few moments the fire of no less than 47 pieces of ordnance was plunging along the curtain, driving the garrison from their retrenchments with its pitiless hail, and crushing the whole defence of the line. In the midst of the bombardment a mass of fire barrels, live shells, hand grenades, and other combustibles which they had accumulated along the rampart, was ignited, causing a series of explosions, killing and wounding a number of them, and throwing the remainder into the utmost confusion.

Taking advantage of this accident, the stormers once more pushed forward, and succeeded in clearing the whole line. The breach, the retrenchment, and even the cavalier bastion were all abandoned, and in a few moments the defenders in the hornwork were made prisoners. The panic now became general; those who had so long and so successfully maintained the defence of the main breach desisted from all further efforts, and joined in the general retreat to the Castle.

By 3 p.m. the British were in complete possession of the town, which was in flames in several places. The disorder and licence usual on such occasions were only checked by the fire to which the parties straggling in the streets found themselves subjected from the commanding elevation of the Castle. It was only after some time and with much difficulty that any semblance of discipline

* It had been ascertained a few days previously that the Urumea was fordable at low water almost to its mouth.

was re-established, and the necessary precautions taken to secure the advantage gained. The hornwork meanwhile was promptly connected with the advanced trenches, and thus formed a secure approach to the town.

The effect of the enfilade fire on the high curtain, though only maintained for twenty minutes, had dismounted every gun but two, and the entire rampart presented a scene of destruction and ruin hardly conceivable in so short a time. That the assailants must have succeeded in obtaining possession of this point, even without the ignition of the combustibles, was evident from the effects produced by the fire; but it is by no means clear that such success would have gained them the town. The principal square and every street had been retrenched in such a manner that but for the panic produced by the explosion it is probable that the place would only have been secured after the expenditure of much time and the loss of many valuable lives. As it was, about 700 prisoners were taken, and the remainder of the garrison, consisting of about 1,800 men, shut themselves up in the Castle.

The Engineers had to lament the loss of their gallant chief, Sir Richard Fletcher, who was shot through the heart. He had been the leading spirit in carrying the sieges of Ciudad Rodrigo and Badajoz to a successful issue, and had shown his skill as an Engineer in the design and construction of the lines of Torres Vedras. Lord Wellington had long looked upon him as one of his most valued advisers, and gave great weight to his opinions. He felt his loss deeply. Captains Rhodes and Collier were also killed, and Lieutenant-Colonel Burgoyne, Lieutenants Barry and Marshall wounded, thus bringing up the total loss of the Engineers throughout the siege to four killed and seven wounded, out of a total of eighteen officers. The loss of the Royal Sappers and Miners was also large, there having been sixteen killed. A correct list of the wounded cannot now be traced, but at the last assault the number was twenty-nine. It is probable that during the whole siege there must have been over fifty.

Burgoyne's Journal.—"Sir Richard Fletcher, Commanding Engineer, was killed by a musket shot, and Capts. Rhodes and Collier killed on the breach. The former headed the first party that made a push for the curtain, and fell on the summit, covered with wounds (eleven). Besides myself slightly were Lieuts. Barry and Marshall severely wounded."

Lieutenant-Colonel Burgoyne to his sister:—

"Camp before St. Sebastian,
"Sept. 1st, 1813.

". . . . We at length, yesterday, took the town of St. Sebastian by assault, after a long and very severe struggle. Our loss has been heavy, and among the wounded you will probably meet with my name.

The injury, however, I have received is slight. A musket ball hit me in the jaw and neck, a little under the right ear, but has not lodged, and I believe the bone is not broken." (The bullet grazed the great artery. Burgoyne was at the time endeavouring to lead a party to the storm of the hornwork). "It gives me a stiff neck, however, and, what is worse, with a very good appetite, I *can't* eat, except very soft substances. I expect, however, to be able to attack a piece of roast beef again in a few days. Our loss in Engineers was, as usual, very considerable indeed. The Commanding Engineer was killed, the command therefore for the present devolves upon me, though I don't know how long I shall keep it, as a senior officer to me in the corps, though not in army rank, is before Pamplona, and another at Lisbon."

Lord Wellington decided not to sacrifice any more lives in an assault on the Castle, but trust to a bombardment to compel a surrender. A vigorous fire of mortars was therefore opened against it on September 2nd, and continued with little cessation until the 8th. Meanwhile, a large extension of batteries, to bear on the Castle, was effected. One for seventeen guns was thrown up in the hornwork, and another for three guns on the left of the isthmus.

At 10 a.m. on September 8th, fifty-nine guns and mortars opened fire, and the bombardment proved of so crushing a nature that the enemy were scarcely able to return a shot. Lieutenant Jones, who was in the Castle as a prisoner, gave a vivid description of the effect of this concentrated fire, which tore up and destroyed everything opposed to it. The space was small and much crowded, consequently the loss of life was very great. Lieutenant Jones records that the officer charged with the custody of the prisoners was so irritated at the losses the garrison were sustaining that he refused to supply the prisoners with the tools which they requested in order to throw up cover for their own protection. After the fire had been kept up for two hours the Governor demanded a parley, and consented to surrender himself and garrison as prisoners of war. Part of the works were delivered up at 4 p.m., and the remainder on the following morning.

Thus ended a siege which was almost unparalleled for the sacrifices it entailed on the besiegers when compared to the strength of the fortress. No less than 3,500 officers and men were killed or wounded, and the time expended consisted of thirty days of open trenches and thirty days' blockade between the two sieges. Much of this loss and probably half of the time would have been saved had the attack been conducted according to more scientific principles. This, however, would have demanded a full complement of Engineers and Sappers properly trained to their work, with an ample provision of stores and an abundance of artillery and ammunition. All these things were starved, many of them owing to difficulties of transport. It was only after a repetition of these bloody

examples that the lesson was gradually brought home to the British authorities of providing in a less niggardly fashion for the scientific branches of the army, both as regarded their *personnel*, and also the transport necessary to make them effective.

It will be remembered that an entry in Lieutenant-Colonel Burgoyne's journal on the day of the first assault shows that he was called on to submit a project for attacking the place in front regularly, *i.e.*, along the isthmus. This had always been his idea of the best mode of procedure. His scheme was to make a feint only against the branches, but in reality to assault the hornwork, which, not being at the time threatened, had but few defenders, and could have been readily carried. The sally port in the curtain would have afforded an easy communication into the ditch, which gave a large space of good cover for troops; the hornwork to have a lodgment made in it, and a breaching battery formed in its terreplein. This project was overruled and the original scheme persevered in. Burgoyne's objections to that scheme are as follow, and there is little doubt that they were correct. Had not the daring scheme been adopted of opening fire over the heads of the assaulting columns, and had not that fire caused the explosions on the terreplein of the high curtain, the results would probably have been what he predicted.

"The present plan of attack, it appears to me, cannot succeed. The breaches are 300 yards from where our storming parties must debouch from the trenches, the approach over large rocks, covered with seaweed, and with pools of water, and over all which much fire can be brought; the breach itself has to all appearance a dip at the back, and the houses in flames in the rear, apparently intentionally by the enemy. After this is all carried, however, the town main front" (facing the isthmus) "must be forced, for if that is not taken we must return before high water, having no communication but along the beach. This town front is casemated and high in the interior; therefore by cutting off the two ends, which is evidently done, it becomes a strong enclosure, which enfilades all the long streets, for the town is regular, and has itself a part adjoining the foot of the castle hill cut off by strong intrenchments. I fear we never can succeed without taking the hornwork, and thence breaching the main town front as extensively as we please."

On the departure of the British army, Captain Stanway, R.E., was left at San Sebastian in command of the Fifth Company Second Battalion of the Royal Sappers and Miners, to restore the works, and reform the defective portions of the fortress. They remained on this service until September, 1814, when they returned to England.

Whilst the siege of San Sebastian was suspended, a memorial was being prepared by the officers of the Royal Engineers, in which they brought forward what they felt to be a crying

grievance. The memorial itself was addressed to the Master-General and Board of Ordnance, and was accompanied by an explanatory paper addressed to the Inspector-General of Fortifications. The former, which bore the date of August 20th, 1813, was in these terms :—

"Memorial of the Officers of the Corps of Royal Engineers with the Army under the command of F. M. the Marquis of Wellington, to General the Earl of Mulgrave, M. G. of O., &c.

"Your Memorialists beg, with the greatest submission, to lay before your Lordships, the inadequacy of their allowances to support the heavy expenses to which they are liable on active service in the field, so as to enable them to execute their duties with the readiness and activity frequently required of them. In proof of which they beg to offer the following facts :—

"That they have to support four and five horses and mules, with all the consequent charges of men to take care of them, saddlery, &c., on the same allowances as have never been esteemed large for their brother officers in Garrisons, who are not liable to keep more than perhaps a single horse voluntarily, and who can limit all their other expenses (which they have in common) to any bounds they please, which is totally out of the power of your Memorialists. That it is notorious the economy and even parsimony with which during the long service in the Peninsula your Memorialists have lived, that the horses they have rode have been usually such as Staff Officers (whose stations and duties most resemble those of the Officers of Engineers) would be ashamed of, and would reject as unequal to the work required of them, and that notwithstanding your Memorialists have been most of them constantly under pecuniary difficulties, and Lieutenant-Colonel Sir Richard Fletcher, the Commanding Engineer, can state that of the numerous Officers deceased in the Peninsula, scarce any of the Junior branch but have died in debt.

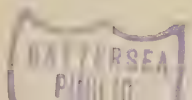
"That your Memorialists have borne up against these difficulties with perseverance and patience under the hope that after the first expense, so obviously beyond their means, they might, by most rigid economy, be able to re-establish themselves ; but which they find, by experience, to be impossible, owing to the current expenses incident to such an establishment as they are forced to maintain, which, far from lessening, only increases their embarrassments.

"Unwilling to occupy too much of your Lordship's time, your Memorialists refrain from entering into minute particulars of the unavoidable expenses to which they are exposed, but if required they feel confident that they can produce such a statement as would in their opinions ensure your Lordship's immediate acquiescence in this their Petition.

"All which they submit to your Lordship's consideration, with the greatest deference, in full confidence of your Lordship's ready support and assistance to relieve them from their existing difficulties.

"And your Memorialists, as in duty bound, will ever pray," &c.

This memorial was signed by the following officers:—



H. Elphinstone, Lieutenant-Colonel; H. Goldfinch, Captain and Major; J. F. Burgoyne, Captain and Lieutenant-Colonel; G. Henderson, Captain; C. Rhodes, Captain; C. Ellicombe, Captain and Major; C. F. Smith, Captain and Major; G. C. Lewis, Captain; R. Boteler, Captain; W. H. Slade, Captain; F. S. Stanway, Lieutenant; T. J. H. Pitts, Lieutenant; A. Marshall, Lieutenant; P. Wright, Lieutenant; H. D. Jones, Lieutenant; C. Barry, Lieutenant; H. Tapp, Lieutenant; E. Matson, Lieutenant; F. G. Gilbert, Lieutenant; William Reid, Lieutenant; J. O. Victor, Lieutenant.

The explanatory paper addressed to the Inspector-General of Fortifications, which covered this document, ran thus :—

"Without enlarging on the constant high price of every article of life with a large Army, which is felt in common by every individual composing it, it is only judged necessary to explain the circumstances that are peculiarly unfavourable to Officers of Royal Engineers, the principal of which are the following :—

"1st. Their being so dispersed that the greater part of them live single, which necessarily leads to more expense than where in all other Corps the officers can form little joint messes, with the additional advantage of reducing their baggage.

"2nd. Their frequent change of situation from one part of the Army to another, to a Siege, a Garrison, an excursion to reconnoitre, or any other point of duty which, exclusive of the heavy expense of travelling where rations for themselves and animals are frequently not to be obtained, and thousands of other expenses occur, breaks up at once every little local arrangement of economy.

"The above two reasons of their very unfixed state prevent their rations being regularly or favourably distributed to them as to other officers, and they are without the advantage of the suttlers belonging to different portions of the Army, and Quartermasters who bring up stores to their Corps at moderate rate, while the Engineers have only the resource of paying the exorbitant prices of the general speculators who follow Head Quarters for any articles they may require; as, for instance, they have paid in the interior of Spain five dollars for a pound of tea, at a time when an Officer of a regiment of Infantry has got it for two.

3rd. The extreme inconvenience and constant mortifications they suffer in the want of efficient servants, not being allowed the attendance of any soldier, and the expense of an English servant not a soldier entirely beyond their means, they are reduced to take into their employment Portuguese or Spanish lads, Deserters or other dangerous characters, without any previous knowledge of them or written proof of honesty, and at best but little capable of taking care of the animals or baggage entrusted to them; this is a disadvantage that scarce any Officer of Engineers with this Army has not repeatedly suffered under most seriously.

"4th and last, the important article of horses and mules. The

establishment of a Subaltern is 3 horses 1 mule, Captain the same, Field Officer 4 horses 1 mule, Commanding Engineer 6 horses 4 mules."

"The value of horses is about double in this army what it is in England. The lowest price of a country horse having no very glaring defect is about 200 dollars, or £45, at the rate the army is paid; that of a moderate English horse is about £70, and the latter is alone capable of enabling an Officer to execute his duty properly, although many are forced to forego this advantage.

"The price of a small mule is from £20 to £25. The first equipment of an Officer in this article alone is equal to six months of his full pay and allowances, for which he is forced to overdraw on the Paymaster; and how difficult, or rather impossible, it must be for him ever to strike off his debt must be perceived from the before-stated disadvantages under which he labours, particularly the number of servants he must employ and their bad quality, to which is to be added the expense of saddlery and the heavy losses in animals by deaths or accidents, which render them inefficient. Many of the officers have lost thus 4 or 5 horses and mules, for which they had no claim for remuneration, and nearly all of them one or two, all which they have been forced to replace on the moment at great expense and risk.

"From the above detail it will only be wondered how the Officers of Engineers on this service have hitherto existed. It has been by living in a state of misery and in a manner much inferior to that of any other branch of the army, by dressing ill, riding horses incapable of executing their duty with alacrity, and consequently, frequently leading to an appearance of a want of zeal, and, notwithstanding all this extreme economy, being almost universally in debt.

"The peculiar disadvantages under which the Officers of Royal Engineers labour as above stated, it will be perceived do not apply to Regimental Officers nor, except in the article of horses, to Staff Officers, the latter, however, have superior allowances, have seldom a table to keep, except those of high ranks, and but few of them have occasion to provide themselves with means of carrying their baggage, with many other advantages attendant upon being immediately about the General Officers.

"At the end of the American war the allowances of the Royal Engineers were put upon the present reduced establishment on the plea of their being adequate to their situation in time of peace, and that the former allowances have not been demanded during the late and present war could only have been because no extended service in the field pointed out the necessity of them till the present occasion had proved their total inefficiency, and shown the Officers of Royal Engineers to be, on active service, infinitely the most inadequately paid of any branch of the British Army, unlike what it is universally acknowledged they should be, and different from the custom of every other European nation. It must also be recollected that till the present war the Engineers had all the advantage of the Service of Government horses and drivers, when that establishment was a General Ordnance concern, and not as now a Military Corps belonging exclusively to the Royal Artillery.

"On considering the whole of the circumstances of their expenses, the Officers of this army humbly propose to Lieut.-General Mann to recommend their allowance of extra pay while on active service in the field to be double what it is at present, which would keep them from debt, and enable them by continuing the same system of economy in other points to put their establishment of horses and servants on a footing more equal to their duty and becoming their situation.

"How far it may be deemed expedient to put them on the more favourable situation of allowances that would enable them to go to some little expense in the purchase and means of conveying a few interesting professional books, maps, instruments, and other means of improving and rendering themselves as equal to their various and difficult duties as possible, they leave to the superior judgment of the Master-General and Lieut.-General Mann, not presuming themselves to obtrude their request beyond what will remove their absolute difficulties on the most sparing and economical calculation."

What the result of this application was, or whether the Inspector-General of Fortifications ever forwarded it, does not appear. Certainly the officers did not get their extra pay doubled as they asked, although they made out such a strong case for help.

The Passage of the Adour.

Lord Wellington made his arrangements during the winter of 1813-14 for the prosecution of the war in France; and as a preliminary to that operation decided upon the siege of Bayonne, as soon as the weather became sufficiently open to enable him to act in the field.

In order to accomplish this, it was absolutely necessary that a bridge should be established across the Adour, although the difficulties attending such an operation were recognized as being extremely formidable. It was considered that such a bridge should be of sufficient stability and permanence to serve as the main line of communication for the army even after the reduction of the town, although, of course, its original purpose would be to facilitate that operation.

Bayonne is situated on the left bank of the Adour, at the point where the Nive flows into it, the distance to the sea being about four miles. After a careful reconnaissance, it was decided that the proposed bridge should be constructed between the town and the sea. A spot was selected, about two and a-half miles from Bayonne, at a short distance below a bend in the river, which would to a certain extent screen it from the view of the garrison. At this point, the Adour had been embanked on both sides by high retaining walls, of a very massive character. The object of this embankment had been to increase the scour of the river, and if possible to sweep away the shifting sandbanks which formed a

bar at its mouth, and rendered its navigation extremely difficult. This, however, it had failed to do, and at the time the construction of the bridge was decided on, the bar stretched away to the westward, rendering the crossing very dangerous, but to a large extent sheltering the river from the effects of the ocean swell. The rise of the tide was about fourteen feet at the springs, and on the right side the country in rear of the retaining wall was constantly flooded, and therefore extremely marshy. The breadth of the river at the point selected for the bridge was close upon 300 yards.

It was evident that in such a position the ordinary tin pontoons would prove utterly useless. The great width of the river, the current which at that time of the year ran with extreme violence from the rush of the mountain torrents, the opposing swell of the sea which often caused excessive agitation in the water, these difficulties united to render it necessary that stability should be combined with flexibility in the form the bridge ought to take. It was therefore decided to secure a number of the local coasting vessels, called *chasse-marées*. These ranged from forty to fifty feet in length, and being decked were of considerable strength. About fifty of them, with their crews, were hired at the ports of St. Jean de Luz, Passages, and Socoa, at a daily cost of £125. The design for the bridge was as follows:—

The boats were to be anchored in a direct line across the river, at a distance of thirty feet apart from centre to centre.* There being an insufficiency of baulks to carry the superstructure, it was decided to use five 13-inch cables in their stead. A stout sleeper spiked to the deck of each boat, running fore and aft, with five deep notches cut in it, at distances of two feet apart, would form a cradle for the cables. On the right bank they were to be anchored by being attached to 18-pounder guns. These being carried over the retaining wall, and dropped on the far side, would bury themselves in the morass, and thus give a good grip to the cables. On the left bank they were to be taken through double blocks attached to a framework constructed for the purpose, and hauled taut by means of capstans.

Lieutenant-Colonel Elphinstone, who was now Lord Wellington's Commanding Royal Engineer, had the general superintendence of the design, and carried out all the arrangements necessary for its execution. Socoa was made the point of assembly, and here all the stores necessary for the outfit of the boats were prepared.

* The reason so many more boats were taken up than would be required to stretch across the river on this plan was that many casualties were anticipated in crossing the bar.

Each *chasse-marée* carried its share of the superstructure of the bridge, together with an assortment of such stores and tools as seemed likely to be required during its construction. Five of the strongest and best boats were selected to form the central piers of the bridge, and on board these were placed the five cables, so coiled that they could be payed out from both ends simultaneously.

When all was ready the flotilla was told off into five divisions, and placed under the command of Engineer officers as follows:—Captain Slade took charge of the central division, Lieutenants Savage and West the two right, and Lieutenants Robe and Rivers the two left divisions. Lieutenant Reid was given the duty of securing the cables on the right bank, and Lieutenant Melhuish that of securing and hauling taut on the left bank. Two Sappers were placed in each boat to fix the sleepers and cut down the freeboard, so as to allow the cables to lie level when stretched. The construction of a boom, to protect the bridge from any hostile efforts on the part of the garrison of Bayonne, was undertaken by the navy.

On the evening of February 22nd, 1814, the flotilla put to sea from Socoa, escorted by a frigate, a brig, and five gunboats, the whole under the command of Admiral Penrose. Meanwhile, Lord Wellington had given orders that a passage across the river was to be forced, and the right bank taken possession of, in anticipation of the arrival of the flotilla and formation of the bridge. For this purpose six boats of the transports were to be conveyed, with eighteen pontoons, to the left bank, and two brigades, one of Guards and one of Germans, were marched to the river on the night of the 22nd. By morning only five of the pontoons and four of the boats had arrived, the road having proved very bad; but Sir John Hope, who had direction of the operation, determined, nevertheless, to attempt the passage, as the remainder were hourly expected.

Burgoyne's Journal.—"February 23rd. . . . . The horses having had a few hours' rest, the whole of the pontoons were brought up, and collected under the nearest cover. The advanced party, of about fifty light infantry, was conveyed across by the six jolly boats. The French picket retired towards Bayonne. The six jolly boats continued passing reinforcements as fast as possible. Two rafts were constructed of three pontoons each; they could not be towed across by the small boats on account of the rapidity of the tide and their unwieldiness. A rope was therefore stretched across the river, and two or three turns made by the rafts at slack tide with some difficulty. At length the tide became very strong, and the raft, loaded with fifty men (with their packs, arms, &c.), stuck in the middle of the stream, and could neither be got one way or the other till about 6 p.m., at slack tide. By the evening only one bat-

talion of the Guards (about 600 men) and a few rockets were across. The enemy came out from the citadel side of Bayonne with about 1,200 men, and drove in our advanced parties, and advanced to very near our line. The battalion was drawn up near where they had crossed on the point from the river to the sea. On the advance of the enemy, with an apparent determination to attack, some guns were opened on them from the left bank, and the rockets fired very sharply on them from a short distance. They had great effect, and checked them completely. At night the enemy retired, and we continued passing troops, but very slowly. The rafts only took two or three turns at each slack tide. . . .

"February 24th.—By morning one brigade of Guards and one battalion of Germans only were across. The flotilla appeared off, but could not cross the bar. Our mode of passing the troops was so slow that it was necessary to try some other. We put four oars to each pontoon, and loading it besides with from twelve to twenty soldiers, they crossed well and quickly for about four hours of the six of each tide. Continued passing the troops by rowing them over in the jolly boats and pontoons, and to keep them going well obtained about 300 soldiers, who could row, to man them, formed three reliefs, and having a quantity of rum from the commissary, to give them half a ration before and after every tour of this duty, kept them going very well."

Meanwhile the flotilla was off the bar, but the wind had set in on shore with considerable violence, causing much surf and a heavy sea. To enter the river under such circumstances seemed extremely venturesome, and much difficulty was experienced in inducing, or rather in compelling, the native crews of the *chasse-marées* to persevere. In fact, but for the presence of the Engineer officers and Sappers, it is certain that none of them would have ventured to face the risk. As it was, thirty-four of them succeeded in passing the bar, and entering the river; two were lost in the attempt, and eleven returned to St. Jean de Luz, having failed to cross. In one of the two vessels that were lost the Sappers on board were drowned with the rest of the crew. The other boat had safely crossed the bar, but was swamped by a sea as it entered the river. In this case the two Sappers succeeded in reaching the shore in a very exhausted condition.

Admiral Penrose, in his despatch of February 25th, 1814, thus recorded his opinion of the services rendered by the Royal Engineers:—

"That so many *chasse-marées* ventured the experiment I attribute to there having been one or more Sappers placed in each of them, and a captain and eight lieutenants of Engineers commanding them in divisions. The zeal and science of these officers triumphed over the difficulties of the navigation, and I trust that none of their valuable lives have fallen a sacrifice to their spirited exertions."

As soon as the boats reached the spot selected for the bridge,

they were anchored stem and stern in their places, the cables were payed out, secured, and hauled taut, and the superstructure laid down. The work was carried on so vigorously through the night that by noon on the succeeding day troops began to cross. Much difficulty was for some time experienced in keeping the cables sufficiently level, as they stretched under the strain of the weight placed on them. By degrees, however, this gradual expansion ceased, and it became possible to keep them fairly taut. Eventually, as baulks became available, they were fixed from boat to boat without disturbing the cable arrangements, and materially assisted in steadying the bridge. At times the violence of the swell made the vessels pitch so heavily that it was considered unsafe to cross; but the bridge was never broken or in any way injured by the action of the water. It continued to remain the principal line of communication for the army in France till the close of the war.

This work has been justly characterized by Sir W. Napier, in his description of the operation, as "a stupendous undertaking, which must always rank amongst the prodigies of war."* In fact, the very audacity of the project became one of the elements of its success. It was deemed so impracticable that the French made no effort to guard against it. They were consequently unable to offer any effectual opposition whilst it was being carried out.

* "War in the Peninsula," vol. vi. p. 94.

CHAPTER XV.

The Second American War—1812-1815.

Opening of the War in 1812—Capture of Fort Detroit by the Canadians—Failure of Subsequent Attempts at Invasion by the Americans—Capture of Washington—Destruction of Public Buildings—Attack on New Orleans—Burgoyne's Journal—Description of the Defences of New Orleans—Advance against the Lines—The Attack Repulsed and General Pakenham Killed—Council of War—Extraordinary Revelation—Lieutenant Wright Killed—Attack of Fort Bowyer—Its Surrender—Close of the War.

On June 18th, 1812, the United States declared war against Great Britain. At that time all the available resources of the mother country were absorbed in the prosecution of her struggle against the French in the Peninsula. It therefore appeared to the American Government that no more likely moment could arise in which to lay hold of the long-coveted Canadian provinces. With this view, early in July, General Hull, at the head of 2,500 men, crossed the Detroit and entered Upper Canada. General Brock thereupon assembled a force of regulars and militia, with which he advanced to the defence of the frontier. After several minor collisions, in which the British were successful, General Hull retired to Fort Detroit on the American side of the St. Lawrence. Brock followed him and determined to capture the fort and garrison. For this purpose he invested the place, opened his trenches, and constructed batteries with which he established a breach, and then prepared to assault. Before doing so, however, he summoned the garrison, and they elected to surrender, to the number of 2,500 men. Thirty-three pieces of artillery at the same time fell into the hands of the besiegers. Captain Matthew Dixon was the only Engineer officer present on the occasion, and he earned the warm commendation of General Brock, as shown in his despatch to Sir George Prevost. The Prince Regent decreed a silver medal to be struck for presentation to the senior officers, and Dixon received this distinction.

Twice again in this year did the Americans attempt an invasion. At the first, the force with its general was captured, as had

been the case at Detroit; and at the second they were so alarmed by the stubborn attitude of the local troops, under Sir George Prevost, that they retired without coming to close quarters.

In 1813 they were at first more prosperous; but although they succeeded in obtaining a temporary footing on the lakes, they did not gain any permanent advantage. In the following year the campaign again opened favourably for them; but this gleam of success did not last long. The conclusion of the war with France enabled the British Government to hurry out reinforcements to Canada, and greatly to strengthen the colonial armies which had so long and so gallantly resisted their powerful neighbour. The battle of Lundy's Lane, after a severe struggle, ended in the defeat of the Americans, and nothing more of any importance was effected by them.

It was now determined to carry the war into the enemy's country, and an expedition against Washington was prepared, under the command of General Ross. The troops for the attack were mostly composed of Peninsular veterans, and amongst them was the Second Company Fourth Battalion Royal Sappers and Miners, under the command of Captain Blanshard, R.E. This campaign included the battle of Bladensburg, the capture of Washington, and the attempt on Baltimore.

Throughout these three years we obtain occasional glimpses of the doings of the officers of the Royal Engineers, and of the men of the Royal Sappers and Miners, but nothing of any real importance. A detachment under Lieutenant Gossett, R.E., was at the attack and burning of Oswego, and another, under Lieutenant Phillpotts, R.E., at the assault of Fort Erie. At the capture of Washington Blanshard and his Company were employed in burning the principal public buildings. It seems that the American President felt so sure that the attacking force would be made prisoners by his troops that he had prepared a handsome entertainment for the British general and staff. The tables were so completely turned that Blanshard and his Sappers regaled themselves with the feast that had been arranged for their betters.* Little can be said in favour of the policy which, by destroying public buildings, of no value from a military point of view, only embittered the enemy without enfeebling him; but there is no doubt that in this matter General Ross, who was in command, was acting strictly on his orders from the Home Government. Under any circumstances, the Engineers were simply agents in the matter. The proof that what they were

* Conolly: "History of the Royal Sappers and Miners," vol. i. p. 211.

ordered to do they did most thoroughly and efficaciously was that within a few hours the Capitol, including the Senate House and the House of Representatives, the Arsenal, Dockyard, Treasury, War Office, President's mansion, as well as the magnificent bridge over the Potomac, a frigate, and a sloop were all destroyed. The value of the *matériel* thus committed to the flames was estimated at £365,000. Blanshard received a brevet for his services on this occasion.

The attack on Baltimore was not so successful. General Ross lost his life in the first engagement, and although the troops advanced close to the city, they were unable to effect their purpose, and compelled to retreat. Up to this time the war had been carried on without much advantage on either side. Every attempt on the part of the Americans to invade Canada had ended in disaster, and on the other hand, the only real success to which the British could point, beyond repelling the enemy, was the destruction of Washington, a feat more humiliating to the Americans than valuable to themselves. Negotiations had now begun in Ghent, which were destined to terminate in a durable peace; but in the meanwhile one more effort was made on the part of the British and Colonial forces to strike an effective blow. New Orleans was the town against which this new attempt was to be made. The troops which had been repulsed at Baltimore, and which, after the death of General Ross, were commanded by Colonel Brooke, were sent to Negril Bay, Jamaica, where they were joined by a body of Peninsular veterans, which had arrived from England under General Keane. That officer now took command of the united force—numbering nearly 6,000 men—and with it landed on December 24th, 1814, at the head of Lake Borgne. With this force were two companies of Sappers—the Second of the Fourth Battalion, under Captain Blanshard, R.E., and the Seventh of the First Battalion, under Captain Emmett, R.E. The other Engineers were Second Captain H. D. Jones, Lieutenants Tapp, Reid, Wright, Matson, Elton, Robe, West, and Wortham.

General Sir Edward Pakenham, who was to command the expedition, had meanwhile sailed from England, with Colonel Burgoyne his Commanding Royal Engineer, Colonel Dickson commanding the Artillery, and other members of his staff, on board the frigate *Statira* (Captain Swaine); and we find the following entries in Burgoyne's journal as to their movements:—

"December 13th. At 8 a.m., while hauling round North Negril Point, fell in with the *Vengeur* (74), with her convoy, containing General Lambert and about 2,000 troops—7th Fusiliers, 43rd Regiment, &c. The

Vengeur made the signal for us to speak, and the captain (Ricketts) and General Lambert came on board. After a consultation we left them laying-to off Negril, and made sail for the channel round the west point of Cuba. The *Vengeur* and convoy sailed from Plymouth a week before us, for the same destination and service. We suppose they will now water in Negril Bay before they continue. Sir Alexander Cochrane was to have brought down the army late under General Ross, together with the reinforcements they had received, consisting principally of 2,000 men under General Keane, who sailed from England nearly two months before us.

"December 21st. In the evening we ran into the bay to the west of the mouths of the Mississippi, and at fifteen miles distance could not see the land.

"December 22nd. . . . . We learn that the admiral and fleet are laying to the north of the Chandeleur Islands, preparatory to landing the troops up Lake Pontchartrain. Five gunboats have been taken thereabouts out of six, and the other destroyed. . . .

"December 25th. Landed near the Mississippi with Sir Edward Pakenham.

"December. 28th. Advanced and reconnoitred the enemy's position.

"January 8th, 1815. Attacked the enemy's position without success; Sir Edward Pakenham killed."

Such is the curt and unsatisfactory entry which constitutes the only account in Burgoyne's journal of this disastrous affair. In all preceding failures he had never been chary of giving the most detailed description, with reasons which, in his opinion, may have led to the want of success. Here, and here only, he says nothing. There must have been some reason for this, and the writer thinks that before he has concluded his narrative, that reason will have become apparent, and will show an amount of moral heroism on the part of Colonel Burgoyne, that rivals the physical heroism he had so often displayed.

New Orleans was, at the time of the British descent, a city of about 17,000 inhabitants, then, as now, the great emporium of the cotton States. From a military point of view, but little could be gained by its capture, though, of course, had the British been able, not only to seize but also to hold it, the navigation of the Mississippi would have been greatly impeded. It is, however, much to be feared that strategical reasons had but small influence in the councils in which its attack was decreed. It was well known by Sir Edward Pakenham and his staff that the prime mover of the enterprise was the Admiral, Sir Alexander Cochrane, and that the hope of a large distribution of prize money was at the bottom of the affair, which had been ill considered, and for the successful carrying out of which the available means were not forthcoming. In chief command within the city was General Jackson, an officer who had

already made his mark, and who was destined to rise to the highest political position his country afforded. New Orleans had no permanent defences; but those improvised by Jackson were of a very formidable character. The city rested on the left bank of the Mississippi, and at a distance of 700 yards from it was a thick cypress wood, utterly impassable for troops, the space between being a morass. Two roads led across this morass into the city, the remainder of the ground being waterlogged, and intersected by canals termed *bayous*. The defence consisted of three lines of intrenchment, running from the city some way into the wood, the outer and second lines being thrown up immediately in rear of *bayous* which formed their ditches; the third had an artificial ditch. The outer line (the only one attempted) was about four miles in front of the city, the second a mile and a half in rear of the first, and the third a mile from the second. The *bayou* or ditch of the outer line was for the greater part of its extent eight feet deep and fifteen feet wide; but it became shallower and narrower as it approached the wood. It was flanked by an advanced work on the right; and on the left, near the wood, an inverted redan was thrown back, otherwise the line was nearly straight. On entering the wood, it was continued for 400 yards, and then made a return to the rear at right angles for 100 yards. All this part of the parapet was a loopholed breastwork of timber. On the opposite bank of the river, at this point about 800 yards broad, a battery for twenty guns had been thrown up, to sweep the ground over which an attacking force must pass to storm the first line. Such was the system of defence devised by Jackson; and the British generals may well have felt somewhat dismayed at the prospect before them.

It has been seen by Burgoyne's journal that Sir Edward Pakenham and his staff had landed on Christmas Day; but this brief entry is but a very inadequate record of the difficulties encountered in the operation. They had left their ships on the 24th, and then had to push forward with the utmost rapidity to join the army, which was seventy miles up the river. The first forty miles were traversed in a small boat; and at ten p.m., on the night of the 24th, they had reached the *Britannia* transport, and found that they must yet advance another thirty miles before their journey was at an end.

"By 11 a.m. on December 25th they succeeded in reaching the landing place at the head of the creek, and ascertaining that the army head-quarters were only 2½ miles further on, they proceeded to join them. The road which they traversed was merely a wretched marshy footpath along the bank of a little canal or *bayou*, which extended from the creek almost to the Mississippi, and was navigable for canoes to within 1,000

yards of that river. On arriving at head-quarters they found the army on the ground on which they had fought on the 23rd, the number of men landed having been increased to 3,500.*

The fight here alluded to was an attempt on the part of the garrison to check the advance of the troops, which then only numbered 2,000 men. The attack was repulsed, but the force remained on the ground awaiting supports.

On the morning of December 28th a forward movement was made, and the troops arrived within half a mile of the first line of intrenchment, which, as Burgoyne records, was reconnoitred. It was then decided that some batteries should be thrown up, and armed with such artillery as could be brought to the front. This was done, and when four gun and mortar batteries had been established, fire was opened on New Year's Day. The result of the day's work was, however, so unsatisfactory that at night it was determined to withdraw the guns and await reinforcements before attempting an assault.

On January 4th two additional regiments arrived on the spot, with General Lambert. Before, however, any final attempt was made a scheme was proposed by the admiral which promised greatly to facilitate matters. This was to cut a small canal from Lake Pontchartrain to the river, and to convey boats by this means into the Mississippi. These were to carry across a storming party, who were to obtain possession of the 20-gun battery on the opposite bank. The guns once in possession of the British could be used to enfilade the defenders' line, and thus render the assault feasible. The canal was duly cut, and forty-two ships' boats brought up to make the passage. All the arrangements were settled for the assault. The party who were to cross the river were to signal their success by firing a rocket, and then the troops were to make their dash at the lines. Unfortunately there was considerable difficulty in forcing the boats through the narrow cut, and in the immediate proximity of the river there was no water in it. Much time was lost, and by 3 a.m. there were only thirty boats afloat. The general assault was to be made at sunrise, and General Pakenham waited with the keenest anxiety for news of their progress. Time passed on, and no welcome signal rocket was fired to announce the capture of the battery. Day was now breaking, and it was imperatively necessary to take action. At length Pakenham gave the order for the advance, trusting that if the party across the river had not succeeded, they would at all

* Duncan's "History of the Royal Artillery," vol. i. pp. 397, 398, the account being taken from a MS. by Colonel Dickson, R.A.

events create a diversion. The troops advanced steadily, but were crushed beneath the fire of the enemy. Sir Edward Pakenham was killed in a gallant attempt to rally his men. Colonel Dickson gives the following account of this episode :—

"Major Macdougal, Sir Edward's aide-de-camp, informed me that at the moment the column of General Gibb's brigade stopped they began firing front and rear, and Sir Edward, who was at some distance behind, to observe the operation, immediately galloped up to the head of the column, exclaiming, 'Lost from want of courage,' and was trying to encourage the troops on, which he succeeded in doing for a few yards, when he was wounded in the thigh, and his horse killed. Major Macdougal having extricated and raised him from the ground, he was in the act of mounting Macdougal's horse when he was hit again, and fell into Macdougal's arms, ejaculating a few words, which were the last he spoke." *

The loss in the attack was very great, and it soon became evident that it could not succeed. The troops were ordered by General Lambert to retire out of fire, and a council of war was held to decide on future proceedings. This council was assembled in a cottage, little more than a hut, and on a table in the centre of the room lay the body of an officer of the staff, covered with a sheet. There was no other place in which to meet, and the members of the council stood around the body. News had just reached them that the battery on the opposite side of the river had been captured, and was ready to act if the attack were renewed. In spite of this success the decision of the council was to abandon the undertaking and retreat to the ships. Colonel Burgoyne was commissioned to cross the river and superintend the operation of bringing off the troops who had possession of the battery. This was a very critical movement, but he performed it successfully. The army was retired, the troops were re-embarked, and the attempt on New Orleans became a desperate and bloody failure. It afterwards became known that the Americans were so dismayed at the loss of the battery, and so fully alive to the effect it would create when the attack on the lines was renewed, that they were preparing to abandon the town when they received the news that the British were retiring, and had left the battery.

Much discussion naturally arose afterwards as to why the council had decided to sacrifice the advantage they had gained, and as Burgoyne had been the man selected to withdraw the troops, it was always supposed that his was the influential voice

* Duncan: "History of the Royal Artillery," pp. 407, 408.

that induced the decision. Not a word escaped him to clear himself of the reproach, nor did any of the council do him the justice to say what was the fact, that his had been the most urgent voice in favour of renewing the attack. This became known in later years in a most extraordinary manner. The body laid on the table and covered with a sheet was that of Major Stovin (afterwards Sir Frederic Stovin), the Assistant Adjutant-General of the force, who had been shot in the throat, and pronounced dead after a hasty examination by the doctor. Whilst the council were in debate, he recovered consciousness, and heard distinctly all that passed. The subject was a very delicate one, and Stovin for many years kept silence. Gradually, however, he allowed himself to speak, and the story became known to several friends in confidence. As long as any one remained alive who was a member of the council, he was most desirous that his name should not appear in the matter. Colonel Wrottesley, in his life of Sir John Burgoyne, touches on the subject, and after stating that that officer was in favour of a fresh attack, adds in a note that Sir Frederic Stovin was his authority; but he gave no details—probably Sir Frederick did not even then wish the whole story known.*

In this unfortunate affair, Lieutenant Wright, R.E., was killed. The sad fate of this gallant young officer was universally deplored. He had served throughout the most critical portions of the Peninsular War, and had earned for himself a reputation far in excess of that which could have been expected from his rank. He was at all three sieges of Badajoz, in the last of which he was wounded. He was also at that of Ciudad Rodrigo. He was again wounded at the capture of the forts of Almaraz, being the only Engineer present. It was he who was always jocosely coupled with Lieutenant Reid by the Duke of Wellington as his two favourite Engineers, "Read and Write." It was generally felt throughout the corps that by his death the loss had been sustained of one who had added greatly to the reputation of his branch of the service, and who, had he been spared, would have proved one of its brightest ornaments.

The disaster at New Orleans rendered the leaders of the expeditionary army very desirous to undertake some operation which might, to a certain extent, compensate for the failure of their original design. It was therefore decided to attempt the capture

* The writer's authority for the tale as here told is Major-General Sir John Cowell, R.E., to whom Sir Frederic Stovin had imparted it in confidence. It is with his permission now made public, the events referred to having occurred nearly three-quarters of a century ago.

of Fort Bowyer, a strong work situated at the point of the bay leading to Mobile. For this purpose a force of three regiments—about 1,000 men—was landed on the coast, seven miles from the fort. General Lambert himself commanded these troops, with Colonel Burgoyne as his Commanding Royal Engineer. At the commencement of the operation, Burgoyne was the only Engineer present, having nine Sappers with him, the remainder of the officers and men of the two Companies that had served at New Orleans being under orders to follow with the other troops that were to be employed in the attack. The nine Sappers who were with Burgoyne were all carpenters. They had been lent to the navy to assist in repairing the ships' boats, which had been much injured during the affair at New Orleans—hence their presence on the spot before the remainder of the Companies.

The date of the landing was February 8th, 1815, and the troops at once moved up and invested the fort, which was closely reconnoitred by Burgoyne. He found it to consist of a semi-circular battery, built of strong timber and sand, the guns, which were heavy, being mounted on traversing platforms. This battery was closed in the gorge by two fronts, showing a masonry escarp of about sixteen feet, well fraised, and a palisaded ditch. It had a short time before been engaged by some of our sloops of war, and had driven them off with considerable loss, the *Hermes* having been blown up.

A parallel was opened on the same night by a working party of 100 men, at a distance varying from forty to a hundred yards from the edge of the ditch. This was a somewhat delicate operation, and Burgoyne, who took charge of the work, records—

"As we broke ground so near the place, I explained to them that it was important that no noise should be made which might attract the notice of the garrison. Shortly after beginning work, however, the enemy commenced firing in our direction ; two or three men were hit and began crying out. I held up my hand, and said, 'Hush,' and immediately there was a dead silence."

Sir Charles Pasley, in his "Elementary Fortification," says, referring to this siege—

"The first night of the operations soldiers of the line only were employed. From a want of skill and experience in the nature of the duties required of them, and there being very few engineer officers to direct, they collected in groups instead of being spread out as they ought to have been. Consequently out of one small party of twenty men, fourteen were killed and wounded by a single discharge of grape shot, and such confusion ensued that very little progress was made in the course of that night."

This is directly contradicted by Burgoyne's statement, which is—

"About 100 yards in extent was effected during the night, with a loss of ten or twelve of the workmen. Nothing could have been better than the conduct of the men on this occasion."

He adds that at daybreak the parallel was occupied, and such a fire kept up from it as prevented the enemy from making any effectual reply. The completion of a hundred yards of parallel by a working party of a hundred men, could not fairly be described as "very little progress."

We seem to discover the feeling that dictated the criticism in the next passage:—

"On the second night of the siege, the small party of sappers was employed in addition to the troops of the line. By the assistance of these few men the officers of engineers were enabled to regulate their working party to so much advantage that before morning they had completed a parallel of 200 yards in extent."

It is quite clear that Pasley's object was to show the value of his newly-trained corps; but this might well have been done without underrating the work of others. The real state of the case, as regards what was done afterwards, is thus given by Burgoyne:—

"February 10th. . . . By evening the remainder of the officers of Engineers and the two companies of Sappers joined. At night we completed the four batteries. A brigade of Sappers, relieved at midnight, and assisted by thirty workmen of the line added by sap about 200 yards to the parallel."

Thus it will be seen that the 200 yards spoken of by Pasley were added on the *third* night, when the whole of the two companies were on the spot. On the second night the only work done was the commencement of the batteries, the completion of which Burgoyne records above.

The batteries were armed and ready early on the 11th, when General Lambert summoned the fort. After some negotiation the defenders capitulated, and on the following day marched out 400 strong, and grounded their arms on the glacis as prisoners of war. The story is thus told by Duncan:—

"After a short parley its Governor surrendered, begging, however, to be permitted to defer its evacuation till the next day, *as so many of his men had got drunk*. This was agreed to; but the gate of the fort was immediately given over to a company of British infantry, and the British flag was hoisted."

The fort was evacuated on February 12th, 1815, and on the 13th the news arrived that the war was at an end, peace having been signed at Ghent on December 24th of the preceding year.

CHAPTER XVI.

1814-1830.

Joint British and Prussian Expedition to Holland—Lieutenant Sperling's Journal—Attack on French Fleet at Antwerp—Its Failure—Scheme for Assault of Bergen-op-Zoom—Sperling's Account—First Success and Subsequent Failure—Peace of 1814—Return of Napoleon from Elba—Battle of Waterloo — Sperling's Account — Oldfield's Account — Misbehaviour of a Company of Sappers—Wellington's Description of the Battle to Jones—Burgoyne's Memo.—Capture of Péronne—Engineer Equipment—Close of War—Jones and the Netherland Fortresses—His Mission to Holland in 1830—Bombardment of Algiers in 1816—Burgoyne's and Whinyates' Accounts.

The disasters encountered by the French army in the retreat from Moscow, and the consequent necessity to concentrate as far as possible all the outlying Imperial forces to create the nucleus of a fresh army, led to the reduction of the French garrisons in Holland. The Dutch were not slow to take advantage of the opportunity thus afforded them to revolt against the alien Government under which they had so long been writhing, and to recover their national independence. In this they were only partially successful. The open country fell into their hands, and the French were driven into the various fortresses. They were, however, utterly unprovided with any organized force, and so long as there remained spread over their land a number of fortified posts of greater or less importance, garrisoned by the enemy, it was impossible for them to maintain their newly-acquired liberty. To support their efforts, and to endeavour to recover their fortresses, an expedition was sent from England in the winter of 1813 to act in conjunction with a Prussian corps under General Bulow. The British force was placed under the command of Sir Thomas Graham (afterwards Lord Lynedoch), and under him were Major-Generals Cooke, Mackenzie, and Skerret. The Engineers who were attached to the troops were Lieutenant-Colonel Carmichael Smyth, C.R.E., Captains Sir George Hoste and Thompson (the latter of whom commanded the Fourth Company of the Second Battalion of Royal Sappers and Miners,

having Sub-Lieutenant Adamson under him), Lieutenants Abbey (Adjutant and Quartermaster), Sperling,* Hayter, White, Cooper, and Eyre.

The force arrived off Helvoetsluys on December 15th, 1813, and was landed on the 18th at Williamstadt. The Engineers were rapidly pushed to the front by Steinbergen to Tholen.

Sperling's journal says :—

"Our party consisted of Captain Thompson, Abbey, Cooper, and self. Tholen, where Sir Thomas Graham and Colonel Smyth were, was our destination. The resting-place for the night was Steinbergen, about ten miles distant. Rain had set in; the road which lay along the dyke was in a wretched state from the previous traffic; the horses frequently could scarcely walk from the depth of mud. We had some difficulty in tracking our way, from our ignorance of the country, and the peculiar arrangement of the roads following the dykes. Night overtaking us added to our perplexities. We were delighted at length to find ourselves in a town.

"December 19th. . . . . Being obliged to resume our route, we prepared our horses and set off for Tholen. We passed near Bergen-op-Zoom, still occupied by the French. . . . . I fell in with Colonel Smyth, who had been admitted blindfolded into Bergen-op-Zoom with a flag of truce, to induce the commandant to surrender, who declined, stating he was fully prepared for an attack. He (Smyth) was with Sir Thomas Graham."

The first Engineer operation was the construction of a bridge of boats at Zandwarbreiten.

"December 31st. By the exertions of Abbey, our adjutant, the previous day, enough boats had arrived during the night for stretching across the river. By break of day we were at work, only ceasing with the night. There were five boats and the wherry, which obliged us to place them further apart than should have been done could more have been obtained. The other materials were chiefly procured from Oudenbosch. Considering the preparation of the materials, credit was due to the men for the zeal with which they worked. In the course of the afternoon Sir Thomas Graham passed over first, accompanied by the Colonel (Smyth), who gave me an expression of satisfaction. Afterwards cavalry and waggons followed." †

The next incident of importance was the attempt to destroy the French fleet which had taken shelter within the basin of Antwerp. It was thought that batteries could be constructed, and a sufficient

* Lieutenant John Sperling wrote a very detailed journal of all the operations in the expedition in which he was concerned; from this work much of what follows has been extracted.

† This Bridge is referred to in Pasley's "Elementary Fortification."

amount of fire brought to bear on the fleet to effect its destruction without the necessity of capturing the fortress, an operation quite out of the power of the limited force then available. An advance was made and the place invested by the British and Prussian Corps. Batteries were then thrown up.

Sperling's Journal.—"February 2nd. . . . . Having reported myself to Colonel Smyth, he gave me directions for the construction of a mortar battery, and to take the Sappers under my charge with me. I understood that Sir G. Hoste, Capt. Thompson and Cooper had somewhat similar employments elsewhere. On arriving at the place for my battery, I found that spot had been selected because the garrison had commenced a defensive work, which would save us much labour. Ferdinand's Dyke extends from the river nearly to Merxem" (a village in the suburbs of Antwerp), "affording complete cover from the artillery on the side away from the town. To remedy this they were constructing the work which in part now served us for a parapet, and brought us much nearer to the docks than any of the other batteries in progress."

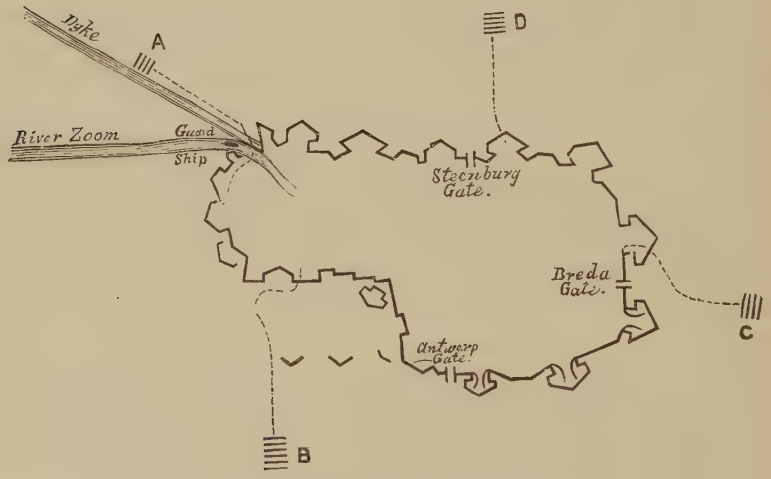
There were altogether five batteries thrown up—one for six $7\frac{1}{2}$-inch mortars (the one referred to above), a second for four 10-inch mortars and two 8-inch howitzers, a third for three 12-inch mortars, a fourth for four 11-inch mortars and two 24-pounder guns, and a fifth for three 24-pounder guns. Most of this ordnance was French and Dutch, picked up in the country, and very inferior.

Sperling's Journal.—"Soon after three o'clock" (on the 3rd) "the batteries opened at the same time on the shipping. The Colonel sent Hayter to assist Capt. Thompson, who was occupied in finishing the battery for the 24-pounders, which was more exposed than the others, the French having constructed a battery in advance of the fortifications, which fired right upon it. I accompanied him. The battery was in a garden near the house, and there were many trees around. We had not been long here when the scene became not a little appalling, the whiz of the shells carrying death and desolation, the crash upon the houses, the branches of the trees split and falling about. Considering our position very few suffered."

The bombardment was kept up with great spirit on February 3rd, 4th, and 5th, but on the 6th General Bulow withdrew the Prussian Corps, which was called away to Brussels. The British force being by itself insufficient to support the attack, it was abandoned. Even had this not been done, it is very doubtful whether the object aimed at, viz., the destruction of the fleet, would have been attained, owing to the insufficiency of the artillery power. The vessels, although repeatedly struck, were never

seriously injured, nor was it possible to set them on fire, as the crews were able to extinguish all outbreaks before they could attain strength. Colonel Smyth, in his report on the operation, remarked that in order to destroy shipping by shells it was necessary that such a rapid and extensive fire should be kept up as to prevent the possibility of putting out the flames.

We now come to the most daring operation of the campaign, one which was brilliantly conceived and skilfully executed, and yet which failed in an unaccountable manner on the very eve of success. This was the attack on Bergen-op-Zoom. Sir Thomas Graham having obtained ample information from repeated and



THE ASSAULT ON BERGEN-OP-ZOOM.

close reconnaissances of the fortress, considered that in spite of its great strength the place could be surprised by a *coup-de-main*. It was ascertained that where the river Zoom passed through the enceinte, there was at low tide only two feet of water, and that at this point an entrance was practicable; further, that the escarps generally were low, many of the fronts only demi-revetted, and three bastions not revetted at all. At this time the water in the wet ditches was all frozen, and it had been found that the ice had only been broken by a narrow cut in the centre, which could be very easily passed upon planks. The frost, moreover, had rendered it impossible for the garrison to

avail themselves of their water defences by opening the sluices. Taking all these points into consideration, and knowing that the very audacity of the project would render it unlikely to be guarded against, Sir Thomas Graham, in conjunction with Colonel Smyth, drew up the following scheme for the assault :—

A column of 1,100 men (A) was to enter by the bed of the river, overpower the guard, and on reaching the rampart turn to its right to assist column B of 1,000 men, which was to penetrate by escalade, the ditch in its front being dry, and the bastion only demi-revetted. A third column (C) of 1,200 men was also to enter (at the spot indicated in the sketch) by escalade, the bastion selected for the purpose being demi-revetted and having no outworks. At this point a large pond had been formed by shutting the sluice through which the river Zoom entered the town, and in consequence of this inundation no outworks had been constructed on the front. The pond being at this time frozen over, access could be obtained to the crest of the glacis without difficulty. A fourth column (D) of 650 men was to make a false attack on the opposite side of the fortress to that by which column B was to enter. This, it was anticipated, would much distract the defence. The following account of what took place is extracted from Sperling's journal, he having been appointed to guide column A :—

"Between six and seven o'clock" (8th March, 1814) "I received a message to come to Major-General Skerret's, where his staff and a party of officers, among whom was Sir G. Hoste, R.E., were finishing dinner. He (Sir G. Hoste) had been sent over from head-quarters with instructions for an attack that night upon the fortress of Bergen-op-Zoom, which he had communicated to the General. He now entered more into detail with me as to my part. The object was to take the garrison by surprise ; ten o'clock was named for the hour of the assault, which had been fixed in reference to the attack by the river, as it was low water at that time ; otherwise a later hour would have been in every respect preferable. He gave me a note which stated that I was to put myself under the orders of Colonel Carleton, who commanded that portion of the 44th Regiment with the army, to lead the storming party entering by the river into the town. A tracing was shown me of the fortifications where our attack was to be made. First there was the dyke to be crossed close under a battery which commanded its whole length. Then the descent into the river, the position of the guard-vessel in the middle of the river, with spiked harrows fixed at the bottom of the river on each side of the vessel and in front of it. The vessel itself and the entrance by the river were protected by two light pieces of artillery placed at the bend of the river into the town. These obstacles being overcome, we were to mount the right bank of the river a little beyond the guard-vessel, where stood the guard-house. Before entering the body of the place there still

remained some palisades to be passed, and a bridge over a curve of the river communicating with the outworks." . . . . "At the appointed hour we were paraded to the number of 1,100* men, under the command of Major-General Skerret and Brigadier-General Gore. . . . . A selection was then made for the advanced party or forlorn hope, who were placed under Carleton. My place was with this party with seventeen sappers, furnished with various tools and implements for clearing away palisades or other impediments to our progress. We walked in front, taking the lead with the guide, who was given in special charge to two men never to lose sight of him." . . . . "At last the dyke was reached, and we commenced filing along it to the fortifications, having in our face the battery, which swept the whole length of the dyke on both sides." . . . . . "It was barely ten when the sound of distant firing reached us. The alarm was thus given. There was no time to be lost. We scrambled up as well as we could the slippery sides of the dyke. The battery opened its fire, accompanied with one of small arms. Our safety consisted in rushing forward. As we jumped into the river, the guard, panic struck and ignorant of the extent of the danger, hurried out of the vessel, and we, getting through the spikes and water, followed its defenders up the river. I was a little in advance of the Colonel, who turning suddenly to the right, got up its bank, crying out, 'I am in first.' We hastened to the guard-house, which was almost deserted, the men being occupied upon the ramparts firing at our people who were crossing the dyke. They made little defence and gave up their arms, bewildered by the suddenness and boldness of the attack. The officer of the guard surrendered his sword to me.

"Having disarmed the guard we took them with us. Our party consisted only of the advance. Those following were checked, and left the advance unsupported on account of the fire from the other side of the river." (The fact was, that the next portion of the column turned by mistake to the left, and on the rising of the tide became cut off from their comrades.) "We now proceeded to the palisades, which presented no obstacle, the gate having been left open. The bridge over the river, which formed the communication between the town and outworks, was not drawn up, thus affording a free passage. Here, according to our instructions, we took to the right hand along the ramparts. General Gore agreed with Carleton that it was better not to pause for the rest of the column, but to advance rapidly to prevent the rallying of the different guards, and with the prospect of meeting General Cooke's column" (B). "In our progress along the rampart, at first we only fell in with the sentries, and then larger parties. They were all disarmed, the muskets being thrown over the rampart into the ditch, and the prisoners following in the rear.

"We came to a halt about the fourth bastion, disappointed as to

* Sperling's published journal says 11,000 men, but this is a palpable clerical error for 1,100, although, curiously enough, it is repeated a second time.

meeting General Cooke's column, of the place of whose entry by some oversight we had not been informed, though we were now near the very spot, but they were very late. Our bugle was sounded, but in vain we listened for any response. I do not think our party exceeded one hundred and fifty, probably under. Our prisoners were, however, more numerous, which in the dusk gave some importance to our party. Again we resumed our progress along the ramparts to prevent the assemblage of our opponents. It was found it did not answer to stand to fire, as our adversaries did the same, but when we ran upon them they either surrendered or made their escape down the slopes. Our men, however, could not be kept from firing, which in the darkness was dangerous to ourselves. The Colonel complained of being separated from his own men and being placed over others who neither knew him nor his voice. We had now advanced more than half round the ramparts, and were quite at a loss to account for not having seen or heard anything of the other attacking columns so anxiously looked for. We had passed the Antwerp and were close upon the Breda Gate. At Bastion No 8 our progress was arrested by a more numerous body than we had hitherto encountered, who seemed determined to contest our further advance. This bastion was planted with trees, from behind which they fired upon us. Our party returned the fire. Their ardour being damped, they were reluctant to come to the charge. We had, however, become mixed with them in hand to hand fight around the trees, and were making prisoners when the slow beat of a drum attracted our attention. As this ominous sound drew nearer our opponents took fresh courage, while it filled us with anxiety. We soon discerned a large body of men advancing with measured step along the curtain leading to the bastion in which we were engaged. Our contest was renewed with fresh energy. A ball felled General Gore, which I noticed to Colonel Carleton. The column still gradually and cautiously approached with the same ominous beat of drum, until they had entered to the middle of the bastion, when they came to a halt as if to discern between friends and foes. This gave our brave Colonel an opportunity of rallying his little band, and the prisoners in our rear concealed in some measure the insignificance of our numbers. Observing their hesitation (for a sort of solemn pause had taken place), our gallant Colonel put on a bold face and stepping in advance said, 'Messieurs, mettez bas vos armes.' The answer was a volley of musketry, and this distinguished officer fell to the ground.

"Our party now made a simultaneous movement in retreat, but finding that after a little firing the column resumed its former caution with slow step and beat of drum, we retired leisurely with the hope of falling in with our own people.* This cautious advance and hesitation of the main body of the garrison proceeded probably from the supposition that we were merely a detachment preceding the main body. It, however, proved our safety and enabled us to bring off our prisoners, as we met with no opposition except from stragglers, who had resorted to the

* After Carleton's death Sperling himself conducted the retiring movement.

ramparts. When we had retired to about the place where the advance had been sounded in our previous progress, we discerned a large body of men in front of us. We anxiously hailed them. They, knowing that no column had entered in the direction from which we came, had so entirely concluded us enemies, and were prepared to treat us as such that no response was made to our cry. Imagine our mutual joy when we recognized each other, and found that this was Major-General Cooke's column, consisting principally of the Guards, which had effected its entrance by the bâtardeau. The other column, which attempted an entrance near the Breda Gate, the next bastion to the one where we met our repulse, had been obliged to retire with considerable loss, and were brought in following the Guards. With General Cooke I had the pleasure of falling in with Colonel Smyth and Sir G. Hoste, and exchanging mutual congratulations, considering that the place was ours, but was sorry to hear that Abbey was shot through the leg and arm (he now lies in a doubtful state*), and Adamson" (the Sub-Lieut. of the Company of Royal Sappers and Miners), "killed by a shot through the head. The opinion of our leaders was that we should remain quiet during the night and take possession in the morning. Colonel Smyth then took his leave to report to the General, Sir G. Hoste accompanying him."

Such is Sperling's narrative of the proceedings so far as they fell under his eye. It only remains to state that column B had found no difficulty in escalading and entering at the point designated for them under the guidance of Captain Sir George Hoste, R.E. Column C found the enemy prepared for their reception, and suffered some loss, amongst others Lieutenant Abbey, R.E., the guide, who was mortally wounded. Failing to penetrate at the intended point, they were drawn off and entered the fortress at the same spot as column B, to which they were joined, forming up on the left. Column D, allotted to the false attack, did its work well, although it opened fire somewhat prematurely, and thus alarmed the garrison before the other columns had effected an entrance. The idea was that by making as much demonstration as possible they would draw off the garrison from the real points of attack, and in this they were very successful, as the defenders were principally concentrated in the vicinity of the Steenburg Gate, their point of attack. Indeed, some of them must have actually penetrated within the works, although they were unprovided with ladders, as several were found killed on the ramparts near the gate.

Until now all had gone well. More than 2,500 men were within the place and in communication with their reserves outside.

* The wounds proved fatal.

It required but a little promptitude and decision to complete what had hitherto been a brilliant success. From this time, however, every step taken appears to have been one of a series of mistakes. The first and most fatal error was the decision that the force should remain quiescent on the ramparts awaiting daylight without making any immediate attempt to secure its advantage; the second fault was that no effort was made to concentrate the troops forming column A. The advance party of that column, under Colonel Carleton, had done all that was wanted, as described by Sperling, who guided them. The next portion of the column had unaccountably turned to the left and become enclosed within two bastions, whilst the river, now no longer fordable owing to the rise of the tide, cut them off from their comrades. The remainder had been posted in the outwork, apparently with the idea of securing the Water Gate. General Skerret, who commanded the force, had been killed, and no one seems to have been in a position to take his place. The two next officers to him, General Gore and Colonel Carleton, had both also been killed, and the column, divided as it was into three separate detachments, was practically without leaders. The third error was the detaching a battalion from the main body to assist and support the party at the Water Gate, thus further weakening the force required to secure the place. Such was the position of affairs when day broke. The garrison had by that time recovered from their surprise, and finding that no effort had been made by the enemy to complete the capture of the town, they themselves pushed forward to the attack in the endeavour to recover the advantage they had lost in the assault.

The party enclosed in the two bastions to the left of the Water Gate made a stubborn defence, but being completely cut off was before long compelled to surrender. The force at the Water Gate, augmented by the battalion that had been sent to its support, was now exposed to a heavy fire from the ramparts behind. Part retreated through the gate to the ground outside, and found themselves enclosed in a *cul de sac*. Being unable to escape they also surrendered. The remainder climbed over the ramparts and, crossing the ditch, succeeded in making good their retreat, with the loss, however, of many men who were drowned by the breaking of the ice. These calamities caused Sir T. Graham to order the withdrawal of the remainder of the troops and the abandonment of the enterprise. Thus ended in disaster an operation which seemed to have been brilliantly conceived and dashingly executed. The extent of the calamity is well summed up by Colonel Carmichael Smith in his notes on the subject:—

"We were doomed to drink the bitter draught of mortification and

disappointment to the very dregs. When we came to exchange our prisoners on the following day, we received from the enemy more British soldiers than there were efficient French troops in the fortress."

The following letter was addressed to Colonel Smyth by the Inspector-General of Fortifications on the subject:—

"Pall Mall, 2nd April, 1814.

"Sir,—Lieutenant-General Mann desires me to inform you that his Lordship the Master-General, before whom your report of the gallant, though unsuccessful, attack upon the fortress of Bergen-op-Zoom has been laid, has expressed himself highly satisfied with the zealous conduct of yourself and the officers of Engineers, as well as the officers, non-commissioned officers, and soldiers of the Royal Sappers and Miners on the above occasion. I am also desired to convey a particular approbation of the gallantry and ability shown by Lieutenant Sperling while attached to the advanced party which first entered the fortress under the immediate command of the late Colonel Carleton. You will be pleased to make known this communication to the officers and men under your orders." "I am, &c., &c.,

Signed, "John Rowley,

"Dy. Inspr. Genl. of Fortifications."

Sperling's Journal.—"April 2nd. Two additional Captains of Engineers have joined us—Oldfield and Harris."

As a consequence of the conclusion of war by the abdication of Napoleon, the French were withdrawn from all the fortresses of the Low Countries, and Sperling thus records the taking over of Antwerp:—

"2nd May, 1814. This morning I accompanied the Commanding officers of Artillery and Engineers* with the other officers of each corps into Antwerp. We were attended also by the heads of the different departments with their staff. A selection was to be made of different officers to receive over the stores of their special department in Antwerp and the various forts occupied by the French, who, on their part, did the same, appointing officers to deliver them up. We made altogether a large cavalcade, and were welcomed by the inhabitants, who expressed their pleasure at our entrance . . . . The French Commanding Engineer seemed an intelligent officer, and we had some pleasant converse. He said he would prefer defending Antwerp to any fortress in Europe. He expressed great surprise at our leaving Bergen-op-Zoom after having it in possession."

"12th May. On account of the number of fortresses to be occupied, there has been a considerable increase in the number of R. E. officers, and another company of sappers. It has been thought desirable to

* Sperling had been appointed Adjutant, vice Abbey, killed at Bergen-op-Zoom.

arrange a mess at an hotel instead of dining as we now do, subject to their charges. The price paid is three francs a day."

This entry is somewhat puzzling, as, at the date when it was made, only two additional Engineers had joined, viz., Second Captains Oldfield and Harris. In June, July, and August, the following six were added:—Captain Sir C. F. Smith, and Lieutenants Cole, Covey, Kay, Mackenzie, and Ker.

Matters remained quiet in Holland and Belgium for the rest of the year, and arrangements were being made for the gradual transfer of all the strong places to the Dutch. Early in 1815 all was changed. We get a glimpse of the excitement that prevailed from Sperling's journal:—

"March 13th, 1815. Intelligence of Buonaparte's escape from Elba and landing in France reached us on the 9th. On the 10th, Major Tylden, R.E., dined with me."

"March 14th. White arrived from England. . . . The report of Buonaparte's rapid and successful progress has put us all on the alert. General alarm is the consequence." . . . . "Should he continue his progress in this country our retreat may be as rapid as it was in '94, for though we have several fortresses, yet it is a work of time to provision and put them into a state to resist an attack. In making too large a grasp, we may lose that which, otherwise, we might have some hope of retaining." . . . . "Our officers are being distributed in the fortresses, and defensive preparations are being carried out."

"29th March. I dined yesterday with the Colonel. At his recommendation a Brigade-Major has been appointed to our department. He has chosen Captain Oldfield, who served under him in Scotland. We have all now our hands full of work."

By this time the strength of the Royal Engineers had been raised to thirty-one, and in the course of the following three months that number was increased to sixty.

"31st March. We have reports of Buonaparte's advance."

On the following day Sperling was sent to Ghent to carry out works to cover the bridge over the Scheldt, and otherwise strengthen the town.

"April 2nd. We commenced this morning with 250 men. They were set to construct two earthen redoubts, also to reinstate part of the town rampart which had quite lost its original shape. Besides myself, there were two junior officers of Engineers, and an Assistant Engineer from the Line. Our number of workmen increasing the next two days, they at last amounted to 2,000."

"April 10th. The works being now in a forward state, Lieutenant Bolton was left in charge till the arrival of Captain Harris. I returned

to Brussels." . . . . "I found the Duke of Wellington had been some days at Brussels."

"April 12th. This day's post has brought the thanks of the Master-General for our exertions in putting the fortresses into an efficient state."

"April 13th. From the great increase of the Department we muster now about 50 officers with a very good field equipment, pontoon train, &c. The heads of departments are now somewhat anxious as to their positions, the Duke having made so many changes in Spain on taking the command. There is an apprehension of the same now. It is also said that Colonel Burgoyne and the Peninsular Engineer officers who served under the Duke in the Spanish sieges expect to occupy Colonel Smyth's position."

"June 13th. Sir George Hoste has joined us from England, and we are still looking for more officers. Though head-quarters continue at Brussels, the prospect of our moving seems approaching. Many seem to have very sanguine expectations of a speedy termination to the contest."

This last entry proved a very faithful foresight, as Napoleon's brief inroad into Belgium was close at hand, the battle of Waterloo being fought five days later. The following Engineer officers were present on the field :—Lieutenant-Colonel James Carmichael Smyth, C.R.E. ; Captains Sir George Charles Hoste, John Oldfield, Brigade Major ; Second Captains Frank Stanway, Alexander Thomson, John William Pringle ; Lieutenants Marcus Antonius Waters, Francis Bond Head, Francis Yarde Gilbert, John Sperling (Adjutant), and Andrew Douglas White.

"June 17th. Major Oldfield and myself were ordered to join the Colonel this morning" (they had been left behind at Brussels when the army first advanced, and were not present at Quatre Bras). "This relieved us from the suspense and anxiety of the preceding day. On reaching the army we found the retreat had commenced, rendered necessary by the defeat of the Prussians, that our connection with them might be maintained. It was a beautiful sight in an open country to see the cavalry and light troops retiring from hill to hill, while the infantry, thus protected, were withdrawing by the road in good order." . . . . "Soon after I reached the army the Duke desired the Colonel to have an entrenchment at Brain-le-leud, which was to form a protection on the right of the intended position. There was a company of sappers at Hal. I was accordingly directed to proceed thither, and order them to march immediately to Brain-le-leud to make an entrenchment. My first thought was to shorten the distance by traversing the forest of Soigny, but I soon saw that from waterways and cross paths I should get into difficulty, therefore hastening to Brussels I got a fresh horse, for the one I rode had been out all day. Through pouring rain Hal was reached by five o'clock. Having communicated the Colonel's direction to the Captain, the company was ordered for marching at six o'clock. I returned to Brussels and slept there."

"June 18th. Left Brussels early in the morning. Joined some officers of Artillery on the road. Arriving at Waterloo, found Sir G. Hoste and Oldfield at their billet breakfasting, whom I joined. The Colonel was with the Duke, inspecting the position which had been taken up. . . . When the Colonel returned to the village he was displeased that the Duke had not found the company of Sappers at Brain-le-leud, which arrived soon after at Waterloo. It appeared that, though the distance was about seven miles, from the intricacy of the lanes through the forest, they had missed the way that inclement night, and lost themselves in the forest."

Such is Sperling's account of this transaction. The Brigade Major, Captain Oldfield, wrote also a diary of the events of this important campaign, and he throws a slightly different light on the affair. He is writing of the morning of June 18th :—

"Soon after Col. Smyth had left, Captain ——" (the name is nowhere given) "came in and told me that he was in arrest by the Colonel, who, it seems, had met him at the entrance of the village" (of Waterloo), "whither he had come in place of remaining at Braine-le-leud ; that he had proceeded to the town of Braine-le-leud, and hearing from the Major that British troops had left it the preceding day, he moved his people forward to Waterloo, which he considered as part of the position, and was looking about when Col. Smyth came up." . . . "The error of the Captain, who disliked being in the rear and was anxious to see what was doing in the front, might have led to the most unfortunate results had we experienced any reverse."

This Company was the First of the Fourth Battalion, and seems to have been all through most unfortunate. Having failed to construct the intrenchment by which the Duke had intended to strengthen his right, it remained in front of the village of Waterloo during the best part of the 18th. Towards afternoon, Sir George Hoste ordered it to fall back, and it was moved to the rear of the village. At this time Lieutenants W. Faris and C. K. Sanders, R.E., and Sub-Lieutenant R. Turner were with it, the Captain being in arrest in the village of Waterloo. In the position the Company had taken up it blocked the road, and when the Belgians and Hanoverians, struck with panic, were retiring hastily, they carried away the Company of Sappers with them. Lieutenant Sanders being informed by the fugitives that the French were close at hand, and that the road for retreat would shortly be intercepted, unfortunately permitted his men to join in the tumultuous stream. There is no doubt that everyone concerned behaved badly. The men lost their knapsacks ; tools, baggage, and horses were also abandoned, and the Company was thoroughly disorganized. As a consequence, Colonel Smyth

refused to recommend any of the officers or men attached to it for the Waterloo honours and advantages.

Having faithfully narrated this unfortunate blot on the general good service of the Corps, we will give a different account of the conduct of another Company from Oldfield's journal :—

"A company of Sappers arrived from Antwerp at Bruxelles on the morning of the 18th. The Sub-Lieutenant immediately proceeded to the office, ascertained that Captain Stanway, who was appointed to the command, was with the army, and proceeded at once with his company to place himself under orders, making his way from Bruxelles to Waterloo through hosts of fugitives and impediments, regardless of the reports of the fate of the day having gone against us. They arrived on the field unfortunately too late to participate in the action."

During the action of the 18th Oldfield records :—

"In another of the charges, Lord Uxbridge rode up to Colonel Smyth and expressed his desire to get some guns to bear upon the enemy, who were coming down upon us in great force. Upon which the Colonel offered my services to Lord Uxbridge, by whose directions I went in search of some guns, and falling in with two moving in rear of our first line, brought them up at a trot to Lord Uxbridge, who gave them further directions."

He gives the following interesting particulars about a plan of the position of Waterloo :—

"Shortly after my chief had joined head-quarters (this was on the 16th) he sent in to me for the plan of the position of Waterloo, which had been previously reconnoitred. The several sketches of the officers had been put together, and one fair copy made for the Prince of Orange. A second had been commenced in the drawing-room for the Duke, but was not in a state to send, I therefore forwarded the original sketches of the officers.

(Morning of the 17th.) "Upon my joining Col. Smyth, he desired me to receive from Lieut. Waters the plan of the position, which, according to his desire, I had sent to him from Bruxelles the preceding day, and of which I was told to take the greatest care. It had been lost in one of the charges of the French cavalry and recovered. Lieut. Waters, who had it in his cloak before his saddle (or in his sabretasche attached to his saddle, I forget which), was unhorsed in the *melée* and ridden over. Upon recovering himself, he found the cavalry had passed him, and his horse was nowhere to be seen. He felt alarmed for the loss of his plan. To look for his horse he imagined was in vain, and his only care was to avoid being taken prisoner, which he hoped to do by keeping well towards our right. The enemy being repulsed in his charge was returning by the left to the ground from which he had advanced. After proceeding about fifty yards, he was delighted to find his horse quietly destroying the vegetables in a garden near the farmhouse at Quatre Bras. He thus fortunately recovered his plan, and with it rejoined the Colonel. The retreat of the

Prussians upon Wavre rendered it necessary for the Duke to make a corresponding movement, and upon the receipt of a communication from Blucher, he called Col. Smyth and asked him for his plan of the position of Waterloo, which I immediately handed to him. The Duke then gave directions to Sir William de Lancy to put the army in position at Waterloo, forming them across the Nivelles and Charleroi chaussées."

We will now once more take up Sperling's account :—

"Being with the Colonel, who accompanied the Duke with his staff in the early part of the battle, until by the various charges we became scattered, seeking refuge in the infantry squares, but remaining on the hill near the artillery, the best opportunity was afforded of seeing the battle. Sometimes we were enveloped in smoke, shells bursting on all sides, cannon balls and bullets flying about. Nevertheless, every movement was effected with that order and precision which excited admiration even in such a terrific scene of desolation, in which were continually multiplying the dead and dying. Horses were galloping about, having lost their riders ; others were maimed. Wounded men were limping or creeping to the rear ; others, more severely, were being assisted." . . . "The infantry were drawn up in two lines of squares, flanking each other, on the slope of the hill, a little retired from the summit, so as to be completely under cover, yet able to act as occasion might require, and capable of resisting any attack of cavalry. Skirmishing parties were in advance, and on the flanks." . . . "Hugomont was the scene of animated contest and great loss of life ; but we kept possession of it, or rather what remained of it. La Haie Sainte was subject to a similar contest ; but there, I believe, we were not so successful." . . . "During the battle I was sent with a message to Waterloo.* If order prevailed in the battlefield there was the greatest confusion in the rear. Some recruits, Belgian cavalry, I believe, had taken fright, and spread the report that the battle was lost. Brussels was filled with alarm, and the road to it with confusion." . . . "Pringle of ours is wounded in the breast ; I hope not dangerously. A bullet through the elbow of my coat, and another on my saddle, have reminded me of my gracious Preserver." . . . "We paused some time on the battlefield. The Colonel, thoughtful of some memorial, dismounted and took up an officer's sword from the slain. It did not occur to me to do the same, nor did I think how soon the spoilers would be over the dead. The night coming on, we returned to Waterloo with light hearts. On reaching the morning's billet, we found it turned into a hospital filled with the wounded, and presenting a melancholy sight. A vacant room was, however, obtained in the village, which accommodated all the Engineer subalterns, about eight in number. We got some food, and the ready wit of Francis Bond Head, who was one of those so nearly taken by the French at Charleroi, escaping without

* Probably this was the message to the Company of Sappers to retire behind the village.

his hat, told so effectually on our host that he supplied us with wine. After this most of us wrote a few lines to our friends to accompany the despatches. For the night we laid down upon some straw, with our feet to the centre of the room."

Sir John Jones, in his autobiographical Memoir, has the following interesting details. He was accompanying the Duke in their annual inspection of the Netherland fortresses in 1819, and on passing the field of Waterloo the Duke walked over it with him, and explained all the leading features of the battle. Jones has noted the following points:—

"Speaking of the quality of his army he said, 'I had only about 35,000 men on whom I could thoroughly rely; the remainder were but too likely to run away.' He mentioned, in proof of the latter assertion, that the Belges, before the battle commenced, were placed along the hedge on the left of the *chaussée*, and the division of General Picton and Kempt's and Pack's brigades were posted in reserve on the extreme left. The Belges, on the very first forward movement of the French, all quitted their ground, and he was obliged to occupy it with two divisions from the extreme left, so that no reserve existed on that point, which damaged all his plans, and sadly diminished his means of resistance where the French made their most strenuous exertions. Coupled with this, his plans were sadly deranged by the conduct of a general of the Hanoverian Landwehr, on whom the command of the troops devolved on Baron Alten being wounded. The force posted on this point consisted of a British brigade, a brigade of the German Legion, and two brigades of Hanoverians, and instantly, on the fall of Alten, General ——, without saying a word to the Duke, retired his division from its advanced position, and removed to the rear. La Haye Sainte had just fallen, and the Duke came to the spot to make a fresh disposition of the troops in its rear, with a view to parry the effects of its loss, when, to his amazement, he found them all gone, and was received by a fire from the French tirailleurs from the very ground on which he had posted, and still expected to find the division, thus marched away. It was now in consequence of these two withdrawals with the utmost difficulty that he could collect men sufficient even to spread over the ground, and the misbehaviour of this militia general had well-nigh cost him the battle. At another period of the action, having ordered up the Nassau troops, they fell into confusion and gave way, and when he went personally to rally them and induce them to move forward, they absolutely fired at him. 'In fact,' said the Duke, 'there was so much misbehaviour that it was only through God's mercy that we won the battle.' These were his very words noted a few minutes after their being uttered."

Colonel Jones having asked him whether he did not think that the French fought better than in Spain, owing to being commanded by their Emperor in person, he replied, "I saw no

difference in our hard fought actions here and there. If I had had the same army as in the south of France the battle would have been won in three hours."

The Duke continued :—

"I first saw the Prussian videttes about half-past two, and never in my life did I observe a movement with such intense interest; the time they occupied in approaching us seemed interminable—both they and my watch seemed to have stuck fast."

Colonel Jones adds to his account :—

"During their walk over the position, the celebrated guide De Coster and a set of ragged urchins kept offering for sale buttons, bullets, and all sorts of trash picked up on the field, and would insist on enforcing on the Duke their own version of the battle. This he bore with perfect equanimity and good humour, till being interrupted whilst giving a most interesting account of the steadiness of the infantry in opposing the cavalry, by a ridiculous rhodomontade as to his own individual conduct, he said sharply in French, 'Allow me to know what I did myself;' to which Colonel Jones added, 'This is the Duke of Wellington.' At this announcement they all appeared to be petrified, stared with astonishment for a few moments, and then followed at a respectful distance till they regained the carriage."

In the year 1816, Colonel Jones was invited to dine with Sir George Murray in Paris to meet General Foy, and the conversation turned on Waterloo. Foy said on that occasion :—

"The Emperor sent for me about 10 a.m., and accosted me thus: '*Monsieur le Général*, you have often fought the English; here is their rear guard, and we shall have a *jolie affaire* with them if they wait an hour longer. What will they do?' 'Pardon me, Sire, if I say that I believe Wellington's whole army is here; the English troops keep quiet and out of sight till the attacking columns are close to them, then they jump up and advance, and are as steady and fit to act as if they had been from the first in line. I humbly conceive that such will prove to be the case to-day.' '*Non, non.* There is nothing here but a rear guard, and we shall have a very *jolie affaire.*' "

Sir John Burgoyne paid a visit to the field of Waterloo in 1816, and after a careful inspection of the ground, wrote an able paper on the subject of the battle. The following extract on the Engineer side of the question may be read with interest :—

"Even a single company of sappers, with their tools, might in a very few hours have rendered most essential service in improving it" (our ground), "by preparing the two buildings for defence, and throwing up traverses for guns across the two *chaussées*. The Guards did to the *château* what was necessary for its defence. Had the Haye Sainte been

loopholed, all its doors and approaches towards the front and flanks been strongly barricaded, and a communication made to the rear, it would probably have been held through the whole day. The traverse across the Genappe *chaussée* would have given our artillery the command of that road by which the enemy brought down his troops to many of the most serious attacks, and still more so, had the eighteen-pounders been up which had been prepared for the field. Had there been opportunity and means for more work, the points are clearly marked out where four or six detached works might have been placed to advantage, besides the cover that might be thrown up for the line. The Duke did not wish to have any ground entrenched which might give any clue to his intentions, but would have been glad to have had anything which could be thrown up at the time. Two companies of sappers and 3,000 men might, on the night of the 17th, in addition to the above-mentioned posts, have thrown up such a line as would have afforded great cover to our infantry and guns, have brought them more to the ridge of the hill, and would have considerably checked and broken the advances of cavalry."

Immediately after the victory of Waterloo, the British and Prussian armies advanced into France on their road to Paris. Cambray capitulated without a shot; but at Péronne the commandant refused to surrender, and arrangements were made for an assault. This fortress, which is on the Somme, has powerful fronts to the north and east on the land side, and is protected on the other two sides by the river. The eastern front is covered by a large hornwork, with a ravelin before it, the whole enclosed with glacis and covert way. It was ascertained that there was no drawbridge, the entrance being closed by massive gates. Two columns were told off—one to escalade the right bastion of the hornwork; the other, with two guns, to blow in the gate and enter through the ravelin. Two brigades of guns were to cover the operation, one to sweep the faces of the hornwork, the other to enfilade the main front behind it, so as to prevent the garrison on that point from bringing their fire on the assailants when they had entered the advanced work. The attack was perfectly successful. The garrison, evidently cowed by the French disasters and the ignominious capitulation of Cambray, made a very half-hearted defence; and as soon as the British had established themselves in the hornwork they surrendered the fortress. The Second Company of the Second Battalion of Sappers had the honour of leading the assaulting columns; one portion being with the ladders for the escalade, the remainder with the column that was to enter by the gateway. Sub-Lieutenant Stratton and Lance-Corporal Edward Connall clambered over the gate, forced their way through the spikes, and jumped into the work. They then tore down the

fastenings and admitted the troops.* This was after the fire of the guns had much injured the structure. Captain Thomson, R.E., led the escalade at the bastion. Both he and Stratton were severely wounded. This took place on June 26th, and a Dutch garrison was left in the place.

Sperling's Journal.—"June 28th. I was despatched with a message to the officer placed in command at Péronne, and to make observations with respect to the fortifications and their state. I arrived there about 10 o'clock. The Governor kindly insisted on my breakfasting, or rather taking lunch with him and some of his officers. On my showing some surprise at the abundance of his table, he said that as the French had almost ruined them they were now living at free quarters; the inhabitants furnished what they required. I afterwards rode round the fortifications. They are so strong that our getting possession arose only from the weakness and hesitation of its defenders."

Meanwhile, the Engineer force with the army had been distributed in accordance with a Corps order, issued by Colonel Smyth on June 20th. A brigade of Engineers was attached to each division. This brigade consisted of a Captain, three subalterns, and a Company of Sappers under its sub-lieutenant, with drivers, horses, and waggons, carrying intrenching tools for the employment of 500 men, also a due equipment of artificers' tools and other stores. The pontoon train consisted of four Companies, afterwards augmented to five, carrying eighty pontoons, besides store waggons, &c., for the transport of which 800 horses were attached. This train was under the command of Major Tylden, R.E. At this time the Engineer establishment, either with the army or in the various fortresses in the Netherlands, consisted of 60 officers, 10 Companies of Sappers, with 550 drivers, 1,000 horses, and about 160 waggons of various kinds. The lesson had at length been thoroughly learnt that an army requires for its efficient service a complete Engineer equipment. After having suffered severely from the want of such assistance in the Peninsula, the evil had at last been remedied. Unfortunately, the long peace which followed the close of the French war led the authorities to forget the experience that had been so dearly bought. When once again England became involved in a great European struggle, her Engineer equipment was not much better than it had been in the early days of the Peninsular War. The sole exception was that of the men, of whom it possessed a body whose training left but little to be desired. These were, however, sadly hampered for want of the due provision of *matériel* and transport.

* Conolly: "History of the Royal Sappers and Miners," vol i. p. 222.

Sperling's Journal.—"2nd July. Sent to Major Tylden, who commands the pontoon train at Sarcelles, directing him to select the best places for throwing bridges over the Seine. The bridges had been rendered impassable by the French, excepting at St. Germains, where a great part of the Prussian army had crossed to take Paris on the south. St. Denis and Montmartre, to the north, have been strongly intrenched, so that any attack from the north, where we are, would be very destructive. Returned to Gonesse in the evening. My ride proved a long one, having to visit three places along the Seine—Argenteuil, Besons and Carnères, to enable me to speak as to their eligibility for the bridge. From our proximity to St. Denis, and the uncertainty of things, we are obliged to be continually on the alert. The Colonel gratified me yesterday with the intelligence he had received of his being appointed *aide-de-camp* to the Prince Regent; the more flattering, as it is the first appointment that has been made from our corps. It gives him the rank of Colonel."

It may be mentioned here that Colonel Carmichael Smyth was made a baronet, and received the K.C.B., for his services in this campaign, as well as the A.D.C.-ship here referred to.

Argenteuil was the site selected for the bridge, a second one being also established at Asnières. These bridges were maintained for several months, being made movable in the centre to admit of the navigation being unimpeded. The army entered Paris on July 8th, and the war terminated.

Meanwhile, Lieutenant-Colonel Burgoyne, who had landed at Ostend on July 6th, was pushing forward to join the army, but was too late for any of its active operations. On the 15th he reached Péronne, where he found the same Dutch commandant who had been so hospitable to Sperling, and who appears to have been equally so to him. He records that this colonel had received his first commission on the recommendation of Lord Macdonald, of the British Guards, at Linselles, in 1793, and that after serving in the French army under Napoleon for several years, including the campaign in Russia, he joined the Dutch army, under the Prince of Orange, on the abdication of the French Emperor in 1814. He was present at Waterloo, where Sir Thomas Picton, a few minutes before he was killed, tapped him on the shoulder, saying, "Brave Hollandais, Ferme." These two compliments from British generals had rendered him a complete Anglomaniac, hence his overflowing hospitalities to British officers, of which Burgoyne and Sperling derived the benefit.

After a residence in Paris of some months, Burgoyne was appointed, on December 9th, commissioner on the part of the Duke of Wellington to proceed to Mézières and Sédan, where, conjointly with Colonel Adye, of the Artillery, he was to take over these fortresses, and transfer them to the charge of the

Prussians, who were to hold them during the occupation. Much dispute arose with the Prussians as regarded the artillery, ammunition, and stores, which they considered had become their property, and were not to be restored to the French when the places were given back. The brass guns had already been sent off to Prussia, when Burgoyne arrived; but there were 100 iron guns, with their carriages, and a large quantity of stores, that had not yet started. The discussions on this point were so prolonged that it was not until April 6th, 1816, that the transfer was effected, and the inventories signed.

Lieutenant-Colonel Jones having recovered from the severe wound he had received at Burgos, although still somewhat lame and unfitted for active exertion, had in 1814 visited the principal fortresses on the Netherlands frontier in order to make a careful inspection of their strength and equipment. Having completed this, he pushed on to Paris, where he found the Duke of Wellington, who had arrived to take part in the first occupation. The Duke at once named him as one of a commission of Engineers, to report upon the increase and development of those fortresses that would be necessary in order to render the frontier of the new kingdom of Holland secure. The return of Napoleon from Elba, and the consequent war, had prevented any action being taken at the time. Now, however, that peace was again restored, the British commission commenced its functions. The officers composing it were General Bryce, Colonel Carmichael Smyth, and Lieutenant-Colonel Jones. At the same time a commission of Dutch Engineers was also named, consisting of General Croiset, Colonel Vanderkyck, and Major Valter. These two bodies acted quite independently of each other, and submitted separate reports and estimates of what services they considered necessary. Those of the British were completed in August, 1815, the Dutch papers following shortly after.

The Duke of Wellington, with whom rested the ultimate decision in the matter, studied the two reports most carefully. As Colonel Jones has recorded in his Memoir on this subject—

"The Commission was in constant communication with the Duke of Wellington, who, notwithstanding the numerous and important calls on his time, frequently gave up two hours consecutively to discuss the various projects for defence brought before him; and this he did not superficially and in the mass, but entered most minutely into every consideration, whether professional, strategic, or financial."

The English report and estimate provided for strengthening the following points:—

Places.	No. of Garrison.	Calculated Time of Defence—Days.	Estimated Cost.	Time to Complete—Years.
			£	
Nieuport	3,000	30 to 32	115,784	3
Ypres	5,000	32	153,561	3
Redoubt at Merrin	300	6 to 7	39,925	3
Courtray	6,000	32 to 34	457,579	7
Tournay { Town	1,500	8 to 10	78,391	2
Tournay { Citadel	3,500	30 to 32	87,835	2
Oudenarde	2,500	16	190,128	4
Citadel of Ghent	1,800	10	50,975	2
Dendermonde	3,500	34 to 36	230,670	5
Ostend	5,000	36	125,507	3
Antwerp	8,000	32	49,386	2
Grammont	2,500	18	167,256	4
Ath	3,000	22 to 24	143,599	3
Mons	6,000	34 to 36	380,288	7
Redoubts at Binche	600	5 to 6	50,000	2
Charleroy	4,500	26	188,123	4
Citadel of Namur	4,000	28 to 30	117,135	3
New Work at Huy	2,500	26	170,000	4
Liège	2,500	20	120,000	4
			£2,916,142	
To which 10 per cent. was added for contingencies			291,614	
			£3,207,756	

The Dutch report and estimate did not include all the points that were embraced in that of the British; but, on the other hand, their estimates were higher for those they did report on.

The ultimate result was, that a scheme of defence was sanctioned, containing some of the details brought forward by each commission; the British report having been in the main adopted, but modified in many points, where the Duke preferred the suggestions of the Dutch.

The revised estimate then stood thus:—

Original British estimate		£3,207,756
Purchase of land, and other details		800,000
Additional cost of adopting Dutch proposals—		
At Ypres, an excess of	£28,000	
„ Ath „ „ „	266,000	
„ Ostend „ „ „	329,000	
„ Antwerp „ „ „	176,000	
„ Maestrecht, not included at all in the British scheme	222,000	
		1,021,000
Carried forward		£5,028,756

Brought forward	£5,028,756
For the town of Namur	120,000
Brussels	120,000
For posts of observation between Nieuport and Ypres, proposed in Dutch project ..	140,000
Redoubt in front of Courtray	120,000
Two new fortresses in front of Brussels, proposed by the Duke of Wellington ..	1,000,000
	£6,528,756

There were savings to the amount of £330,000, which were intended to be applied to the arming of the fortresses. The funds for this grand scheme were to be found as follows: England contributed two millions sterling, and Holland a similar amount, whilst two and a-half millions were to be taken from the contributions levied in France. By a convention signed between Great Britain and Holland, in November, 1816, the Duke of Wellington was appointed the disposer of this fund, with entire control over the details of construction of the various works embraced in the project. He was authorized to appoint under himself as many inspectors as he might think necessary to supervise the work, which was to be carried out by the Dutch Engineer department. He, however, declined to have anyone under him but Colonel Jones, whom he named his sole assistant. The commissions were then broken up, and the construction of the works begun. This lasted from 1816 to 1828. During all that time Colonel Jones made frequent inspections and reports to the Duke on the progress effected, and the Duke himself annually travelled round the frontier in company with Jones, carefully looking into every detail. Colonel Jones, in his autobiographical memoir, quotations from which have already been extracted, gives a very interesting description of these trips, during which he was thrown in constant and intimate contact with the Duke. The revolution of 1830 rendered null all the efforts that had been made, and the Dutch lost the frontier which had been strengthened at so much cost.

As soon as it appeared likely that they would encounter difficulties in their Belgian provinces, the Duke of Wellington, who was at the time Prime Minister, sent for Colonel Jones, and entrusted him with a private mission to the King of Holland. The Duke's words, as recorded by Jones, were :—

"I wish you to go over there and use your discretion as to any military arrangements that may become advisable, with a view to parry any threatened or probable hostile movements of the French; but be very guarded not to do anything to commit us or the Dutch; to ensure this,

it is better you should see what I have written as to the determination of the English Government."

The narrative continues :—

"The day being damp and chilly, there was a fire in the room, and his Grace, placing his feet on the hob, and making Colonel Jones draw in and place his feet on the fender, then read to him his several confidential letters on the subject. Their substance may be stated in a few lines—that Great Britain would not interfere with the internal proceedings of France, but that she was bound by treaties to protect the Netherlands and her other allies, and that she was prepared and determined to do so on any aggressive movement of the French beyond their own frontier. After having ceased to read, the Duke said, 'Now you know everything. Go round the frontier, recommend whatever you consider desirable for security, and I feel sure I can trust you to do whatever is right and expedient without compromising us.'"

Armed with these instructions, Colonel Jones proceeded to the Hague, where he was presented to the King of Holland by the British Ambassador, Sir Charles Bagot. The King requested him to join the head-quarters of his son, the Prince of Orange, who was assembling a force at Antwerp, to march on Brussels, where the popular ferment was at its height, adding "*Mon Général*" (such was the rank he gave him), "I have the highest confidence in your judgment and discretion. Go to my sons, be their adviser, and I will write an order that your opinion shall be asked and followed, as to any operations the army may undertake."

Colonel Jones joined the Royal Princes at Antwerp, and marched with them to Vilvorde, the troops consisting of 4,000 men, with twelve guns. Here they were met by deputies from Brussels, who desired that the Prince of Orange should enter that city without his troops, and trust himself to the burgher guard. This, after some discussion, he agreed to do, provided they would parade outside the town without wearing the tricolor (the badge of the revolution), and further pledge themselves to obey his orders. "I will do this, he added, '*foi de Prince.*'"

When this decision had been communicated to the General Staff, they all, being Dutch, strove to persuade him to abandon the idea, assuring him that he was not justified in incurring the risk, and that he was not bound to keep faith with men in active rebellion. The Prince began to falter, and asked Colonel Jones his opinion. His reply was—"The word of honour of a Prince is a sacred pledge, and I consider you are bound to meet the Garde to-morrow and enter Brussels under their escort." In this the Prince concurred, and the entry was made as arranged. When, however, Jones endeavoured to persuade him to mollify the inhabitants by the removal of some real grievances, his Dutch surroundings,

who were opposed to any concessions, were too powerful, and prevented any changes being proposed. Finding that he could be of no further use, and being doubtful how far his present position might compromise the British Government, he returned to England to report the state of affairs in person. Within two hours of his departure from Brussels the Prince left the town, all the advantage of his presence there was lost, and in a short time Belgium had become severed from Holland.

One more point with reference to this matter is interesting, and is thus recorded by Jones:—

"Much intercourse with Lord Palmerston on the affairs of the Netherlands led Colonel Jones to form a very high opinion of his lordship's talents, and also of his honour and fair dealing, and that he only wanted capable instruments to become the zealous and judicious advocate of British interests, as the following incident will serve to explain. At one interview he desired Colonel Jones's opinion on a list of the names of six of the recently-constructed fortresses, which he had received from the French Government, as being those they proposed to raze under an agreement recently concluded to that effect. Colonel Jones instantly saw that the places selected were those which threw open the Belgian frontier, and those preserved were such as strengthened the French frontier, and expressed very strongly his dissent from the selection, and hoped it would receive further consideration. His lordship replied: 'The destruction of these places is merely a sop to soothe the vanity of the French people, and there can be no motive for the selection.' 'If so, my lord, and you will give me leave, I will bring the matter to a fair test. Propose to substitute the following six places for destruction instead of those in this list; if the French have no unfair or aggressive views they will readily give their consent to leave those places entire which are indispensable to the security of Belgium.' Lord Palmerston readily adopted the suggestion; a counter list of six fortresses to be destroyed was sent back as being those only which he would consent to give up. On this decision being communicated to the French Government, a Council of War was held at Paris (the proceedings of which unaccountably found their way into the newspapers), in which it was decided it would be better for France not to destroy any fortress than those pointed out, and if they could not enforce their own list they should wait for a more favourable moment to attain their object. Lord Palmerston was as firm as a rock, and to this day (notwithstanding the agreement to serve French vanity), the line of the Belgian frontier fortresses remains intact."

One more incident remains to be recorded before the long period of war was brought to a complete end, and the equally long peace commenced its enervating effect upon the military organization of the country. That incident was the bombardment of Algiers, in August, 1816. Demands had been made on the Dey of Algiers, to which evasive replies were tendered. Lord Exmouth had

visited the town with his fleet without obtaining satisfaction, more especially on the point of releasing the Christians held in slavery by the Algerines. It was at length determined to secure by force what had been refused to peaceful negotiation. Lord Exmouth, therefore, made a second visit, with an augmented naval armament and with instructions to bombard the place. On board this fleet were five Engineer officers,—Major Gosset in command, Captain Reid, and Lieutenants Whinyates, Lempriere, and Hotham, with the 7th Company 1st Battalion of Sappers. The latter were part on board the *Queen Charlotte*, and the remainder in the *Impregnable*. Major Gosset, Captain Reid, and Lieutenant Lempriere were in the *Queen Charlotte*, Lieutenant Whinyates in the *Impregnable*, and Lieutenant Hotham in the *Minden*. Two accounts of this action exist from the pens of officers of Royal Engineers who were present, one in a brief letter from Captain Reid to Lieutenant-Colonel Burgoyne, the other a narrative by Lieutenant Whinyates, which was published many years later. The first of these runs thus :—

"*Queen Charlotte*, off Algiers,

"My dear Burgoyne,— "August 28th, 1816.

"I have made a rough sketch of Algiers, sufficient to give you an idea of our attack, though not otherwise much to be depended on. I have not time to detail the action, which you will have in the despatch. This ship led and anchored head and stern within less than 120 yards from casemated batteries obliquely. It was the admiration of our fleet, and astonished our enemy, who were driven from them the first broadside. But the batteries farther from us were not so easily silenced, and wherever they could fire long shots they had the advantage. During the action the *Queen Charlotte* was veered round to different batteries as on a pivot, and when a large enemy's frigate on flames was coming on board of us, she veered away both cables, and hauled on a hawser and saved herself. Major Gosset, with an officer of the navy, and one of the Marine Artillery, boarded the nearest frigate under a heavy fire (she was not manned), and set her on fire. I think it was our carcasses set fire to the others, and caused amongst our enemies a general conflagration. It was intended to have stormed the mole opposite the *Queen Charlotte*, but it was the difficulty of communicating with us, and getting us off again that prevented Lord Exmouth's ordering it. The ships would soon have fired away all their ammunition (for we had thundered from two or three till ten at night), and if the rigging had been totally ruined we ran the risk of being all taken. Audacity has a great effect in war, and here it has succeeded. Our Sappers were prepared with their arms, hand grenades, smoke balls, and rockets, to storm. We had thirteen wounded at the guns. Neither rockets nor shells would set the town on fire. The most of the Algerine guns are very long. I saw as we dropped our anchors two men outside the casemate, one at each end of an immense

sponge, getting it into the gun. In case this should be the first you hear of us I should say that we gained a victory and made a peace. I have not time to say more."

The other account, from the pen of Lieutenant Whinyates is far more detailed, and the following extracts from it will be read with interest :—

"The fleet stood in for the bay of Algiers early in the morning of 27th August, 1816. I was on board the *Impregnable*, 98, Captain E. Bruce, with 39 Royal Sappers and Miners. It was intended that the company of Sappers should land, and each man was to carry two hand grenades and a piece of slow match, besides his musket and ammunition.* . . . . Our ship, the *Impregnable*, was raked fore and aft, and suffered severely. We were anchored too far from the shore, and our ship being a large and conspicuous object made a good mark. She suffered more severely than any ship in the squadron, having 268 shots in her hull, and her mainmast damaged in 15 places. Our loss was 50 killed and 164 wounded, 9 of the latter were sappers, three of whom were severely wounded, and one of them died. Five sappers were also wounded in the *Queen Charlotte*. The sappers behaved nobly at the guns, and were of great use and assistance after the action as carpenters, smiths, &c., in repairing the damage done to the ships, and were thanked in General Orders. I was for the greater part of the time on the poop with the Admiral" (Milne) "and Captain, looking out for the signal to land, and for some time on the main deck describing the guns that most annoyed us to the Lieutenant who commanded our guns. . . . .

"About 5 p.m. Major Gosset volunteered to set the Algerine frigate, which was moored across the entrance to the harbour at the Mole Head, on fire. Gosset, accompanied by the First Lieutenant of the *Queen Charlotte* and an officer of Marine Artillery, went in the barge of that ship under a heavy fire of musketry from the Mole and batteries, and boarded the frigate (which was not manned, but they encountered some difficulty, as the ports were all closed), and placing carcasses and combustible materials in coils of rope, set her on fire in many different places. . . . .

"9.20 p.m. a boat and Midshipman came from the *Queen Charlotte* to Admiral Milne, saying that as the object of the expedition was now completely accomplished by the destruction of the enemy's fleet, he (Lord Exmouth) was going to haul off, and wished us to do the same. In doing this the *Impregnable* was again raked astern. Most providentially there was a steady fair breeze that took us into action, and when coming out the wind shifted and was directly aft to take us out. . . . .

"After the *Impregnable* had anchored out of reach of gunshot, I went round all the decks with a lantern, accompanied by Lieutenant Beauchamp,

* It was only in the previous year that the men of the Royal Sappers and Miners had been armed with firelocks.

of the Marine Artillery. The horror of the spectacle is difficult to describe. On the middle deck the first thing we saw was eight men lying between two guns, each in the different convulsed attitude in which he had expired. One man had one arm extended, the other close to his breast, both fists clenched in a boxing attitude, whilst his right leg lay by his side, having been cut in two by a cannon-ball close to the hip. Near him was another poor fellow extended on his belly, his face downwards, with his back exposed; between his shoulders was buried an 18-pound shot, for the men fought stripped to the waist, and butts of water mixed with vinegar having tin mugs attached were placed all along the decks for them to drink; legs, arms, blood, brains, and mangled bodies were strewn about in all directions. You could scarcely keep your feet from the slipperiness of the decks, wet with blood. But a still more shocking scene was seeing the men and boys who had been burnt by an unfortunate explosion on the main deck, running about the decks in the most excruciating agony, stark naked, a single feature of whose faces could not be discovered, perfectly blind, uttering the most heart-rending shrieks and cries, and calling out to everyone they met to put them out of their misery and throw them overboard. Sixty unfortunate persons were killed and wounded by this terrible explosion. But this distressing and shocking scene fell short of what we saw in the cockpit, where three surgeons and three assistant surgeons were employed in attending the wounded, whose groans and shrieks and those of the dying pierced the soul to the quick. You tumbled at every step over dead and wounded. One poor sapper, Ederera Mears, who was lying in a corner, and had been severely wounded at the commencement of the action by a grape shot through the thigh, on hearing my voice raised himself up, and forgetting his sufferings, eagerly enquired whether the company had landed and whether we had succeeded. Several were lying on the dressing table, undergoing amputation or having their wounds dressed. I saw the whole process from the beginning of one poor fellow's arm, a youth about 18, who used to wait in the Captain's cabin. He did not move a muscle of his face until the saw touched the marrow, when he gave a shriek which I shall never forget."

The British loss on the occasion was 128 killed and 690 wounded. The conditions of peace were the abolition for ever of Christian slavery, and the immediate delivery of all slaves then in the dominions of the Dey, as well as the return of all sums that had been paid for the redemption of slaves since the beginning of the year, amounting to about £80,000, and an ample apology and reparation to the British Consul. Lieutenant Whinyates was afterwards present at an interview with the Dey, which he thus describes:—

"On the 31st August, communication being allowed with the shore, I went, and having met Captain Brisbane, of the *Queen Charlotte*, whom I had known when a boy, I went with him to the consul's house and saw

the room in which the treaty had been signed. Nine shots had passed through it, making it a perfect ruin. Afterwards I accompanied Captain Brisbane and the British consul to the Dey's palace, and was present at a conference which took place, and in which the embassy was received in state. The Dey, Osman Pasha, a native of the island of Mytilene, in the Archipelago, and who had been Aga, or Chief of the Janissaries, was a fine athletic man, about 42 years of age, with a keen eye and an intelligent countenance. He was seated on a throne composed of two trestles, on which were placed four deal boards one foot wide. On this was a common rug, over which was a thin quilted mattress covered with light blue silk very much worn and faded. There were two cushions of the same colour, with gold embroidery at his back against the wall, and a cushion of red silk with embroidery, also much decayed, at each side of him. He was seated cross legged, with naked feet, on his throne, plainly dressed, having a red shawl turban on his head, another shawl round his waist, and he wore a pair of large loose Turkish trousers, which came down to the knee. He had on a species of waistcoat with white silk lace; over this a light green cloth jacket with no sleeves, but embroidered pocket-holes, and worked at the back and breast with green silk lace. He smoked a long Turkish pipe with amber mouthpiece; the pipe was replenished thrice whilst we were there. His Chamberlain stood on one side of him and his Treasurer on the other, the pipe-bearer and a boy or page richly dressed stood a little in the rear. The throne was placed in an open balcony looking into an open courtyard, and over his head were suspended a hundred or more water melons hung up by pieces of rope-yarn.

"The Dey was cool and collected, and made very shrewd replies, evincing determination and courage; for the purpose of the conference was some fresh demands from Lord Exmouth. He replied that he would willingly fulfil all the terms of the treaty first agreed upon, but if Lord Exmouth made new demands every day he would leave him (the Dey), nothing to exist upon, and that he must retire to the mountains and defend himself as well as he could. Very few besides myself and those officially employed had the good fortune to be present at the conference and to see the Dey.

"In walking round the front and rear part of the Mole batteries, after the conference, I went into one of the casemates by a breached embrasure, and was instantly turned out by some soldiers on guard; but I saw that the destruction in guns and carriages had been great, and also the slaughter, for the back of the casemate walls was covered with blood and brains. . . . .

"The Algerines displayed much personal courage. Their skill in gunnery was good, and superior to what we had been led to expect. Their guns were of brass and very long. Their loss was estimated at about 3,500. They had forty gunboats with which they intended to have boarded the fleet, whilst the hands were aloft furling sails as they expected. The *Queen Charlotte*, by her broadsides, sunk 26 of them, the others ran on shore, bow on, so the guns in them were of no

use, and the men in them were all slaughtered. The reason they gave for permitting us to come so near was that they expected to sink us in a short time, and had they fired at us at a distance they would have frightened us away. The number of guns that bore upon the fleet was about 308 and 7 mortars."*

---

* These extracts are taken from a paper compiled in 1880, by Major-General Whinyates, from his journal and some private letters written immediately after the action.

CHAPTER XVII.

1796-1854.

Successive Augmentations—Lord Cornwallis's Correspondence—Creation of Post of Inspector-General of Fortifications—Increase of Pay in all Ranks—Protest against Promotion by Army Rank—Distribution of the Honours of the Bath unsatisfactory to the Corps—Peace Reductions—The Hanoverian Engineers—Block in Promotion—Augmentation in 1825—New Scale of Retirement and Abolition of Invalid Engineers—Further Augmentation in 1846—Establishment of Seconded List—Additional Battalion on Account of Russian War.

Having brought to a conclusion the sketch of the great Napoleonic war, so far as the Royal Engineers were engaged therein, and the history of the succeeding forty years being almost exclusively of a peaceful character, it may be well in this place to devote a chapter to the organization of the Corps during the first half of the present century.

The last reference to the subject was in Chapter IX., when the number of the officers after the Warrant of 1796 was shown to be eighty-one. The next matter to notice is, that in 1797 the three grades of Captain-Lieutenant, First Lieutenant, and Second Lieutenant each received an augmentation to their pay of 1s., bringing it up to 7s., 5s. 8d., and 5s. respectively. This followed immediately on a similar boon granted to subalterns of the line.

On August 29th, 1798, a Warrant was issued, increasing the Corps by two Captains, two Captain-Lieutenants, four First Lieutenants, and two Second Lieutenants, thus making the strength ninety-one of all ranks. In 1800 three additional Captain-Lieutenants were created, to balance the augmentation of the three Captains in 1796, thus restoring the battalion organization. The Corps now stood as follows:—

1	Chief Engineer	at	44s.	per diem.
5	Colonels	„	18s.	„
6	Lieutenant-Colonels	„	15s.	„
18	Captains	„	10s.	„
18	Captain-Lieutenants	„	7s.	„
30	First Lieutenants	„	5s. 8d.	„
15	Second Lieutenants	„	5s.	„
1	Adjutant	„	5s.	„
94	Total.			

After the union of Ireland with Great Britain it was deemed advisable to abolish the separate establishment of Irish Engineers, which consisted of eight of all ranks, and to absorb them in a general list. At the same time the opportunity was taken to make a further augmentation of twelve officers. The list after this change stood thus—one Chief Engineer, six Colonels, six Lieutenant-Colonels, twenty Captains, twenty Captain-Lieutenants, forty First Lieutenants, twenty Second Lieutenants, and an Adjutant. This was intended to represent two battalions of ten companies each. The Invalid establishment still remained at the strength of seven officers.

These rapid additions may probably be in a great measure attributed to the unwearied advocacy of Lord Cornwallis. In letters written by him to Major-General Ross are the following passages:—

". . . . Some additions must be made to the Corps of Engineers, and two or three second lieutenants may be appointed as extra officers as soon as fit objects can be found; but that service requires much consideration, and in my opinion a great deal more encouragement. The officers have no objects of either ambition or emolument to which they can look forward, unless they seek the latter by improper peculation. After forty years' service they may aspire to Colonel's pay, and nothing more. The situation of Chief Engineer should certainly be improved, and, perhaps you will add, more ably filled. . . . ."

These last words are an allusion to Sir William Green, who had held the post from 1787. At the time this letter was written Sir William was in his seventy-seventh year. It may well be imagined that he was not at that age a very active or energetic man, and therefore most unsuited for the post of Chief Engineer. Another extract runs as follows:—

" . . . . The establishment of the Engineers ought, in my opinion, to be the most favoured branch of the Military service, because it requires infinitely more science and application to dry study than any other, and it holds out fewer inducements to the tinsel and pageantry of soldiering, or of the society of a jolly mess, which are apt to operate powerfully on young minds; in short, the admission into the Engineers ought to be an object to a clever young man who has been three or four years in the regiment of Artillery. . . . ."

The full force of these criticisms was soon made apparent. On April 21st, 1802, a Warrant was issued, which brought great and most beneficial changes to the Corps, the object of it being to raise the status and pay of the senior ranks. The following was from this date to be the strength, rank, and pay of the officers:—

2	Colonels Commandant	at 44s.
2	Colonels	„ 24s.
2	Colonels	„ 20s.
4	Lieutenant-Colonels	„ 17s.
2	Ditto ditto	„ 15s.
20	Captains	„ 10s.
20	Captain-Lieutenants	„ 7s.
40	First Lieutenants	„ 6s.
20	Second Lieutenants	„ 5s.
1	Brigade Major	„ 10s.
113	Total.	

The Chief Engineer was to be no longer borne on the establishment. His title was to be changed into that of Inspector-General of Fortifications. He was to receive 40s. per day, in addition to his ordinary pay, and was to be selected by the Master-General and Board from amongst the Colonels Commandant. It will be seen that by this scale the pay of the senior ranks was largely augmented, no doubt in accordance with the views so forcibly expressed by Lord Cornwallis, to whom also must be attributed the satisfactory change in the position of the head of the Corps, both as regards influence and emoluments.

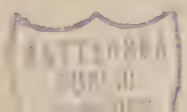
By this Warrant the Invalid Engineers were also increased, both as regards numbers and pay. They were now to stand thus :—

1	Colonel	at 24s.
1	Lieutenant-Colonel	„ 20s.
1	Do. do.	„ 17s.
4	Captains	„ 10s.
1	Captain-Lieutenant	„ 7s.
1	First Lieutenant	„ 6s.
1	Second Lieutenant	„ 5s.
10	Total.	

In 1804, a King's Warrant, dated on July 19th, abolished the rank of Captain-Lieutenant, converting it into Second Captain. At the same time, two Lieutenant-Colonels were added to the strength, which was now 115.

The threat of an invasion of England led to a substantial augmentation in 1805, when the numbers were raised from 115 to 139, by the addition of one Colonel Commandant, one Colonel, two Lieutenant-Colonels, four Captains, four Second Captains, eight First Lieutenants, and four Second Lieutenants. The Corps was now considered to consist of three battalions. This was only the beginning of fresh extensions. On August 8th, 1806, eighteen more officers were added, raising the number to 157.

On September 1st, 1806, the regimental pay of most of the



ranks was increased. They now stood thus :—Lieutenant-Colonels, 18s. 1d. and 16s. 1d.; Captains and Second Captains, 11s. 1d.; First Lieutenants, 6s. 10d.; Second Lieutenants, 5s. 7d. The extra pay followed the same rise, except in the case of the Second Captains. Lieutenants of over seven years' service were to have an additional 1s. per day, with extra pay in proportion.

On April 19th, 1808, fifteen more officers were authorized, and at the same time a Deputy Inspector-General of Fortifications was instituted, with an allowance at the rate of 30s. a day.

The continuance of the war, and the vigour with which it was prosecuted, led to perpetual fresh demands for Engineers, and year after year new Warrants were issued to supply the call. On June 29th, 1809, twenty-nine officers were added, bringing up the organization to four complete battalions of eight companies each; and this was followed, on May 13th, 1811, by another, issued by the Prince Regent, to appoint twenty-eight more. Yet again, on July 21st, 1813, a fresh Warrant added thirty-three more, bringing up the numbers to 262. The list now stood as follows :—

5	Colonels Commandant. .	. .	at £1,000 a year.
9	Colonels. . . .	. .	,, 26s. a day.
18	Lieutenant-Colonels	. .	,, 18s. 1d. ,,
4	Do. do.	. .	,, 16s. 1d. ,,
45	Captains . .	. .	,, 11s. 1d. ,,
45	Second Captains	. .	,, 11s. 1d. ,,
90	First Lieutenants	. .	,, 6s. 10d. ,,
45	Second Lieutenants	. .	,, 5s. 7d. ,,
1	Brigade-Major. .	. .	,, 10s. ,,
262	Total.		

On December 30th, 1814, an order was issued, under instructions from the Prince Regent, removing General Officers, other than Colonels Commandant, from the active list of the Corps. This regulation was to take effect from June 25th previous, and by it Generals were to receive 38s. a day, Lieutenant-Generals, 32s. 6d., and Major-Generals, 25s. As regarded those already holding the ranks, who would be removed by the new rules, they were allowed certain advantages as regards pay, and also an optional retirement of £700 a year, which was not to debar them from employment on the Staff of the army.

One of the results of this order was to break through the old established principle, that promotion to the position of Colonel Commandant, the great prize of the Corps, with its pay of £1,000 a year, was to be by regimental seniority. The Inspector-General of Fortifications, General Mann, put forward the following protest on behalf of his brother officers :—

"If it is understood that General officers may be eligible to succeed to

Battalions" (*i.e.*, to become Colonels Commandant), "according to their seniority *in the Corps* as heretofore, no objection can be offered, but if on the contrary . . . . they may be eligible to succeed to Battalions according to their seniority as General officers, then the constitution and character of the Corps will be totally changed, to the great detriment, if not the entire ruin, of that branch of the military service, since no man, whatever may be his merits and length of service, can any longer look up with confidence to his ultimately succeeding to the highest rank of his profession, therefore his attachment and zeal must necessarily be in some sort weakened. For, whoever has the good fortune or interest to be placed in any very conspicuous situation, and thereby acquiring brevet rank, will thus supersede his brother officers of the same standing with himself who are not so fortunate, although their merits may be no ways inferior. For example, an officer who may have no particular merit to entitle him to distinction than that of being selected to convey the despatches of a General officer may acquire brevet rank, which may ultimately lead to his getting a Battalion prior to officers of longer standing and greater abilities. If promotion to the command of Battalions is made to depend on casual circumstances, and not on the usual routine of seniority in the Corps, then it will be liable to fall off from that high character which it has hitherto maintained so creditably to the country as well as to the Corps itself. It is but very recently that meritorious service has been rewarded so amply with Brevet rank. Most of the senior officers of the Corps have served with merit and distinction, at a period when it was not the custom of the service to be so profuse in the bestowal of Brevet rank, and it would be obviously unfair that they should lose their chance of succeeding to a Battalion because their juniors have come into service in the field when good conduct was rewarded with army rank. Again, it is quite a matter of chance whether an officer has an opportunity of distinguishing himself in the field, many even most able deserving officers from accident may never have the opportunity afforded them, and in a Corps of science promotion should not depend on so fortuitous a circumstance. It should also be remarked that the field duties of the Engineer are those most easily acquired, while those connected with the permanent defences require much labour and deep science; and frequently an officer cannot be spared from the important duties of his station, and has therefore been obliged to forego the hopes of the more brilliant though not more important employment of the field."—(I. G. F. to Mast.-Genl., 24 Dec., 1814, W. O. MSS., xiv.)

To this, the following reply was made through the Secretary, Colonel Chapman, R.E.:—

"It is impossible to make any general regulations, however generally advantageous, to which some objection may not be made, and by which some individuals may not by possibility suffer. He" (the Master-General) "cannot, however, enter into the objections submitted. His Lordship has thought much and attentively on the subject, and he cannot conceive

that the possibility of breaking the routine of seniority by succession in consequence of distinguished services, can hurt the emulation or break the spirit of any corps, nor can his Lordship alter what he has already received the Prince Regent's pleasure to carry into effect, and no part with His Royal Highness's more entire approbation than that objected to. . . . . Would it be said, if Sir Richard Fletcher has obtained Brevet rank for his services in the Peninsula, that injury would have been done and emulation destroyed by that rank (else a barren name) producing the advantages in his own Corps which similar promotion on the same grounds would have obtained in the Line."—(*Ibid.*)

This answer was for the time decisive, and the Corps prepared to accept the new principle. Curiously enough, shortly afterwards an opportunity occurred of appealing against it. A vacancy in a battalion arose at a moment when the senior by army rank was one who had gained his position not by service in the field, but owing to a regimental commission he had held in a Fencible Corps. It was felt that a case of this kind differed entirely from what had been intended as a reward for gallant service in the field. The matter was eventually compromised by the officer accepting a retirement of £700 a year, and renouncing his claim to the battalion.*

At this time the Corps had reached the summit of its good fortune. The war which had prevailed for so many years created a demand for skilled and trained Engineers, such as was never previously known. The opportunities for distinction, and consequent advancement, had been very frequent. The narrative of the last six Chapters will have shown how thoroughly the Corps had seized upon those openings. The position of its officers in the years 1814-15 was a most satisfactory one. The struggle then approaching its termination had demonstrated clearly that scientific soldiers were an absolute necessity for successful warfare. No less than four baronetcies were bestowed on Engineers for services in the Peninsular and Netherlands. Sir Richard Fletcher, Sir Howard Elphinstone, Sir Charles Carmichael Smyth, and Sir John Jones all received that distinction, although in the case of the last-named the title was not granted till some years later.

The honours of the Bath were not so satisfactorily given, owing to a regulation which bore with peculiar hardship on the Corps. It had been laid down that in the revised constitution of the Order, the second grade, or K.C.B., should only be awarded to

* This was the case which was under deliberation when Captain Reid, R.E., was being refused a brevet for his services in the Peninsula. See "Life of Sir W. Reid," in the "Brief Biographies," vol. ii.

those who had obtained five gold medals. These medals were not then bestowed, as is now the case, on all officers and men who had served on the occasion for which it was granted, but were restricted to officers of a certain rank holding high position in the force.

It constantly happened that Engineers of comparatively low regimental status held important posts in their own branch of the service, and these were refused the medal owing to their want of rank. The hardship became doubled when the Order of the Bath was made dependent on the acquisition of these medals, and when the list of honours appeared at the close of the war a loud protest was raised by the officers of the Corps at their almost entire exclusion. This protest was embodied in a letter addressed by the Inspector-General of Fortifications (General Mann) to the Earl of Mulgrave, the Master-General of the Ordnance, on February 20th, 1815.

In this, after thanking Lord Mulgrave for the efforts he had made to obtain for them a fair share of the honours then being bestowed on the Naval and Military services, he proceeds to say that the Corps is informed

"With great grief that his Lordship's efforts have been unavailing, a line having been drawn for the distribution of these honours, which in its operation fatally affects them and them only. The Corps is most grateful to H.R.H. the Commander-in-Chief for the many and very liberal marks they have received of H.R.H.'s favour. On the present occasion they are mortified and dispirited, seeing all their zeal, abilities, and exertions in some of the most arduous services of the war, and which have been frequently acknowledged, as well by the honours which on many occasions have been bestowed by the King, as by the frequent notice of them in Parliament, are now apparently forgotten. A stigma is thus cast upon the Corps which can never be explained away. In the history of this country and of the long war just concluded the honours bestowed on the several branches of the public service will be recorded, but there will be a blank with respect to the Corps of Royal Engineers, and as it will be the only one in the whole Naval and Military circle it will be very natural to conclude that all their previous meritorious services have been tarnished by some subsequent improper conduct. Posterity will not enter into any consideration of the nice distinction of any rule by which they are thus so particularly marked, and they will, therefore, be at once condemned as undeserving. In this unfortunate and distressing predicament, there appears to be but one resource, they therefore presume to hope that a humble and most respectful memorial to the Throne may not be thought improper, and that it may be honoured with his Lordship's countenance and recommendation. H.R.H. the Commander-in-Chief unquestionably found it necessary to fix some rule for the distribution of honours in the army,

but he is too liberal to have adopted any measure that he could have foreseen would bear hard on any meritorious class of officers, or that would occasion a partial awarding of the distinctions to be conferred. The object of the Corps, by their petition to the Throne, is therefore to pray that under the peculiar circumstances in which they are thus situated, the rule with respect to them may be dispensed with, as it cannot create any precedent to admit, or any opening to prefer, new claims from any other corps or individuals. If the gratification of individual claims, however strong, were the leading object in view, his Lordship would not, after the steps he has already taken, been troubled with this appeal, but the main point the officers have at heart is to preserve the honour and reputation of the Corps which, if their prayer is not heard, must for ever stand impeached."

The question of the award of medals, on which the whole controversy turned, is thus explained in a memo. drawn up by Colonel Goldfinch, R.E., in April, 1815 :—

"The Returns of the R. Engrs. for Medals were sent by the C.R.E., in like manner with those of the other Departments of the Army under the command of the Duke of Wellington, to his Grace's Military Secretary, Lord Fitzroy Somerset. In these returns those Captains of Engineers, whether Brevet Field Officers or not, were included, whose stations with the army were considered analogous to those of Captains of Artillery, whose claims to medals had been satisfactorily established early in the campaigns. From some unfortunate misunderstanding or causes, which it might be difficult now to trace, the pretensions of the Captains of Engineers to the same distinction, though often the subject of appeal from those officers interested, appear never to have been clearly understood at home. The Duke of Wellington, as he had previously acted towards the Artillery, declined either to sanction or reject the claims of Captains of Engineers. In the meantime the returns of the Corps have remained unconfirmed by his Grace, and consequently Field Officers as well as Captains have remained alike excluded from the distinctions conferred upon every other military branch of the service. The only instance in which the Duke of Wellington is understood to have sanctioned a medal being bestowed on a Captain of Engineers is that of Lieut.-Colonel Chapman for the battle of Busaco, on which occasion, although only a Captain, Colonel Chapman was the second in command of the Corps with the army; in fact, throughout these campaigns such duties in the Royal Engineer Department as in any other branch of the service would have devolved on Field Officers have been almost exclusively confided to Captains. Sir Richard Fletcher was only Captain of his Corps, with brevet or local rank at the commencement of his command with the army, and Lieut.-Colonel Elphinstone who, on Sir Richard Fletcher's death, became the C.R.E., only succeeded to the rank of Field Officer during the latter part of his services with the army. These two were the only

Field Officers of the Corps of Engineers who served with the Duke of Wellington, consequently few Captains of the Army can have been vested with more considerable charges. Adding to these considerations that the Corps of Engineers is one to which a life must, in a peculiar degree, be devoted, one from which exchange is not permitted, and in which promotion can only be obtained by the slow progress of rotation, without adverting to the nature of its duties in the field, it is hoped that aspiring to an equal participation of the honours in question cannot be considered presumptuous."

Goldfinch then goes on to point out that by a proper allotment of medals three Engineer Officers would have become entitled to the K.C.B., viz., Burgoyne, eight medals for Busaco, Ciudad Rodrigo, Badajoz, Salamanca, Vittoria, San Sebastian, Nivelle, Nive. Goldfinch, six, Talavera, Busaco, Vittoria, Nive, Orthes, Toulouse. Ellicombe, six, Ciudad Rodrigo, Badajoz, Vittoria, San Sebastian, Nivelle, Nive.

The protest of the Inspector-General of Fortifications was unavailing, for although no exception could be taken to the grounds on which it was based, the Prince Regent at this juncture decided that for the future he would not grant the K.C.B. to any officer of the army under general's rank—and all further efforts were, therefore, abandoned. Burgoyne's case was one of peculiar hardship. Owing to the claim that had been made for the gold medal for Ciudad Rodrigo for officers of Royal Engineers of comparatively low rank, the list had never been signed by the Duke, and Burgoyne, who was clearly entitled to it, did not receive the decoration at the time. Failing this he held only four gold medals, and was adjudged not qualified for the K.C.B. The matter was shortly after rectified and the medal awarded to him, but in the meantime the fiat had gone forth that no further promotions should take place below general officer's rank, and the Prince Regent declined to re-open the question. The result was that Burgoyne never wore the order of the C.B. which had been given him, nor did he return it amongst his list of honours. The decoration was found after his death in the box in which it had been presented to him, having evidently never been opened from that time.

The first sign of approaching reduction was given by the disbanding of the King's German Legion, which contained in its ranks a certain number of Engineers. The history of this little offshoot of the Corps was as follows :—

When the Legion was first raised six Hanoverian Engineers were attached to it. In 1804 application was made by H.R.H. the Duke of Cambridge to the Master-General to give them employment under the Board of Ordnance, upon which they were

directed to proceed to the Royal Military Academy at Woolwich, there to be examined as to their qualifications by the professors of that Institution. On September 5th, 1804, General Morse informed Captain Hassebroick (the senior of the number) that he had received a favourable report from the Inspector of the Royal Military Academy of the six Hanoverian Engineers who had gone there for examination, and that he was prepared to issue the necessary orders for their going on duty.

The six officers thus approved of were Captain Hassebroick, Second Captain Berensbach, First Lieutenants Prott and Appuhn, Second Lieutenants Meinecke and Wedekind.

On April 24th, 1807, it was notified to the Inspector-General of Fortifications that the officers of the King's German Engineers were to be placed on the same footing of pay and allowances as officers of the Royal Engineers. Two of their number, viz., Lieutenants Meinecke and Wedekind shared in all the services of their comrades of the Royal Engineers during the Peninsular War, including the sieges of Badajoz and Ciudad Rodrigo. Later on some were sent to Canada, and the others to Mediterranean stations.

The dissolution of the Legion, which included that of the Engineers, was decreed by Horse Guards' Order of December 11th, 1815. It was to take place on the 24th day of the month succeeding that in which each corps should arrive in Hanover. The Engineer officers were then to receive two months' pay in advance, after which they were to be placed on half-pay. At this time their number had increased to ten, although one of them, Captain Hassebroick, had died in the interim. They stood thus—Captain and Brigade-Major Berensbach, Captains Prott and Appuhn, Second Captains Meinecke, Wedekind, Muller, Schweitzer, and Gangreben, Lieutenants Unger and Suttermann.

The last trace we have of this Corps is on April 2nd, 1817, when it was reported that Captain Gangreben had reached Hanover and was reduced, and that Lieutenant Sutterman ceased in the extra pay returns at Malta after the end of July, 1816, from which it was concluded that he set out for Hanover about that time.

This was the foreshadowing of what was shortly to take place in the Royal Engineers. When the army of occupation in the Netherlands was gradually withdrawn it became evident that there were too many of them for the work that remained. The peace duties upon which they now had to fall back for employment were not sufficiently numerous or varied to engage the time of over 260 officers.

It therefore excited no surprise that on February 15th, 1817, a Warrant was issued reducing the numbers by twenty-nine (intended to represent a half battalion). The junior officers of

BATTERSEA
PUBLIC
LIBRARIES

The Author.

1846.

each rank to the extent of the reduction were placed on half-pay, with a view to being absorbed as vacancies occurred. This was a sad blow to the Corps, as the prospects of promotion were much injured, but it was not the only or even the worst shock that was to be encountered. On March 20th, 1819, a further reduction of no less than forty officers was made. The list, when this had been effected, stood as follows:—

Four Colonels Commandant; eight Colonels; twenty Lieutenant-Colonels, of whom four were to be on Major's pay; thirty-two Captains; thirty-two Second Captains; sixty-four First Lieutenants; thirty-two Second Lieutenants; and one Brigade-Major, making a total of 193 officers. The half-pay list was now choked with men waiting to be brought back to the active list, and all prospect of promotion was practically at an end for many years.

The results were in every way most discouraging. Time passed on, and men grew grey whilst still holding the commission of subaltern, until at length it took as long as twenty-three years to obtain a Second Captaincy, of which no less than nine had been passed in the subordinate grade of Second Lieutenant. The Warrant by which this reduction was decreed contained some unimportant changes in the pay. The extra pay of the Second Captain was fixed at 8s. abroad and 4s. at home, and brevet rank was to carry with it an additional 2s. a day.

Matters having reached their worst, began slowly to mend. The first gleam of returning prosperity broke forth in 1825. It had been decided to carry out an Ordnance Survey of Ireland, and it was wished that the work should be pressed forward with the utmost rapidity. To do this, a large number of additional Survey Officers were required, and these could not be furnished from the attenuated list. A new Warrant was therefore issued, dated 19th November, 1825, granting an increase of forty-eight officers of all ranks. This brought back the numbers to five battalions, and cleared off all the remaining expectants from the half-pay list, so that now some little movement might be anticipated.

The next change to notice was the abolition of the Invalid Engineers, which took place by Warrant dated December 23rd, 1831, and in their place substituting a retirement on full pay of two Lieutenant-Colonels, six Captains, and four Lieutenants.

The roster remained without further change for many years after this date, and it was not until April 1st, 1846, that another move was made. On that day a sixth battalion was added, causing an addition of forty-seven officers. The post of Brigade-Major of the Corps was now abolished, and an Assistant Adjutant-General

substituted in his place, with an allowance of twenty shillings a day in addition to his regimental pay.

Officers were also to be allowed to be employed when necessary in the Civil Departments of the Government. That there should be no loss to Engineer services, the Lords Commissioners of the Treasury were empowered to place such officers on the seconded list, giving a step of promotion by so doing. The Treasury was to decide whether such officers should receive the whole or any part of their regimental pay in addition to the remuneration granted to them for their civil services. If promoted during such employment, they were not to receive the military pay and allowances of the higher rank till the cessation of the service. On their return to the Corps they were to be absorbed in the grades to which they then belonged on the occasion of a vacancy.

At the first threatening of a war with Russia, Lord Raglan, who was Master-General of the Ordnance, remembering from old Peninsular experience the necessity of having a full and efficient supply of Engineers, at once pressed for an augmentation. This was granted to the extent of a battalion on February 17th, 1854, thus raising the Corps to seven battalions of forty-eight officers each. It was with this strength that they carried on the Russian war, which, owing to circumstances, became little more than one great siege, and, in consequence, brought a heavy strain upon their energies. The following Chapters will show how that call was met.

CHAPTER XVIII.

The Russian War, 1854.

Sir John Burgoyne's Mission to Constantinople—His Visit to Paris—He proceeds to Gallipoli and Varna—Burke's Report on the Danube Position—The Lines of Gallipoli—Advance on Varna—Successful Defence of Silistria—Death of Lieutenant Burke—Bridge across the Danube—Fire at Varna—Gallantry of Sapper James Cray—Expedition to the Baltic—Capture of Bomarsund—Destruction of the Forts—Landing in the Crimea—Battle of the Alma—Death of General Tylden—The Flank March—Description of Sebastopol—First Bombardment—Death of Colonel Alexander—Battles of Balaklava and Inkerman—Preparations for Winter—Fearful Storm and Consequent Losses—Capture of Tryon's Rifle Pits—The Road Question.

The year 1854 opened with the first mutterings of that storm which was so soon to develop into a fierce and bloody war. Turkey and Russia were already engaged, and it seemed but too likely that England, with or without the aid of France, would act to prevent the capture and occupation of Constantinople by her formidable antagonist. Sir John Burgoyne was at this time the trusted and honoured military adviser of Lord Aberdeen's Government, and he lost no time in urging that the British should take immediate possession of the Dardanelles, as a base of operations for their fleet, and throw up works of sufficient strength to hold that point against the utmost efforts of Russia. The Government decided that he himself should proceed to the spot and make a thorough inspection of the ground. The following letter from Sir James Graham to Lord Raglan, the Master-General of the Ordnance, shows what at that time was contemplated :—

"Admiralty, 26th January, 1854.

"My dear Lord Raglan,—

"The Cabinet accepts with grateful thanks and acknowledgments Sir John Burgoyne's spirited and honourable offer of going himself to Constantinople without delay. They also duly appreciate your readiness to part for a short time with so valuable an assistant. We propose that Sir John Burgoyne should visit Paris by the way, that he should place himself in communication with Lord Cowley, who will be prepared for his arrival, and who will introduce him to the French authorities desirous of a conference. We have written to Lord Cowley begging that Sir John Burgoyne may not be long detained in Paris, for we are anxious

that he should reach Constantinople as soon as possible, and return after inspecting the Bosphorus and Dardanelles with the utmost expedition. We have also notified to the French Government, that if they wish to send an Engineer officer to accompany Sir John, he will be happy to be so associated, and that we can give him a passage in the *Caradoc*, now ready, and waiting orders at Marseilles. We must request Sir John not to go *beyond Constantinople*, but to turn his back on the Black Sea, and to hasten his return to England as soon as the object of his mission is accomplished. The Cabinet is of opinion that if a field officer of Engineers, in whom you confide, could accompany Sir John, and be left by him at Constantinople in full possession of his views and plans, much time might be saved, and the public service would be promoted. We leave this arrangement to your better judgment and discretion. It might be possible to order Colonel Tylden to proceed from Corfu, viâ Malta, to Constantinople with the utmost expedition, and Sir John in passing Malta might make arrangements with Admiral Stewart for Colonel Tylden following him without delay. . . ."

In accordance with the arrangements laid down in this letter, Captain F. Chapman, R.E., was appointed to proceed to Gallipoli, there to await Sir John's instructions. Accompanied by Lieutenants the Hon. G. Wrottesley and Burke, he embarked on board the *Banshee*, and they were conveyed with the utmost despatch to their destination, being the first British officers who landed on the shores of Turkey to take part in the impending war. Colonel Tylden was also directed to proceed to Constantinople from Corfu. Meanwhile, Sir John Burgoyne hurried off to Paris. There he had interviews with the Emperor and the leading French statesmen. Sir John wrote the following report on the subject to Colonel Matson, R.E., who was at the time the Assistant Adjutant-General of Royal Engineers at the Ordnance Office :—

"My mission as far as this, appears to have been attended with good effects. I have had long interviews with the Emperor, with Lord Cowley" (the British ambassador at Paris), "the Minister of Foreign Affairs, and Marshal Vaillant, who is much in the Emperor's confidence. They seem to have been quite at sea about a possibility of acting in Turkey, owing to the danger of the Russians marching down on the Dardanelles, and by so doing forcing our fleets and troops (if there were any) to retire to the Archipelago. I have been explaining the promising accounts that we have of the possibility of turning the Dardanelles into a stronghold, and the vast importance of taking early possession if those accounts shall be realized. They all acknowledge it now, and look with as much interest to our further researches as our own Government. The French have a showing of a good position, some ten or twelve miles in front of Constantinople, the right on the Black Sea, the left on the Sea of Marmora, with a comparatively small *accessible* front, and that probably could be held by 30,000 troops well entrenched. This also would be of vast importance, as it would not only cover Constantinople, and at a distance, like the

lines of Lisbon, but would also cover the entire passage of the Bosphorus. If we can secure the Dardanelles, we may play any game we please with great or with small means in the neighbourhood of Constantinople. Colonel Ardant, of the French Engineers, accompanies us. . . ." *

This visit to Paris seems to have had great weight with the Emperor, for Lord Cowley wrote to Sir John, on February 8th, a letter in which he says—

"You will be happy to learn that your visit to Paris has produced a visible change in the Emperor's views, and he is making every preparation for a land expedition in case the last attempt at negotiation should break down, as it infallibly will . . . The Emperor will not, under any circumstances, come to any determination as to the point of disembarkation for troops until your return; but he assures me he has men and transports ready, and that he can send 15,000 off immediately. I suppose that we can send ten or twelve. The French troops will all be sent from Africa, and therefore, will be already inured to a hot climate and scanty supplies . . . "

The party, after a flying visit to Malta, pushed on for Constantinople, and the next glimpse we have of their work is again from a report to Colonel Matson, dated H.M.S. *Caradoc*, Gallipoli, February 12th, 1854.

"All our officers and Sappers had been sent by the Admiral to examine the Dardanelles" (the party here alluded to consisted of Lieutenants Ewart, Wrottesley, and Burke, and six Sappers who had been taken on from Malta in the *Banshee*), "and on our arrival here yesterday morning from Constantinople I found Capt. Chapman with H.M. steamer *Spitfire*. He has come on board the *Caradoc*, and the *Spitfire* has gone to bring up the rest, for the important position to look for is across the isthmus."

On the same day Colonel Tylden arrived in an Austrian steamer and joined Sir John. The Engineers were at once set to work surveying the ground and making the necessary arrangements for laying out the proposed lines. In a letter of February 22nd, Sir John speaks of very bad weather, and says—

"The detachment on the hill who are engaged to take plans and make designs for works, I fear, must have suffered great discomfort."

This detachment consisted of the above named Royal Engineer officers and Sappers and of two French Engineers. Having carefully inspected the ground about Gallipoli, Sir John returned to Constantinople, taking with him Lieutenants Wrottesley and Burke, and shortly afterwards pushed forward as far as Schumla to visit Omar Pasha. He was taken to Varna in the *Caradoc*, which after

* This Report is dated "Paris, 31st Jan., 1854."

landing him, returned to Constantinople, it not being considered safe for her to remain in Varna Bay. She came back for him on March 20th, bringing with her two additional Engineer Officers, viz., Captain J. L. A. Simmons and Lieutenant Creyke. The first of these was to be attached to the Ottoman army as acting British Commissioner, and immediately on his arrival at Varna he posted off to join Omar Pasha. Lieutenant Burke was also sent to the Danube to make notes on the state of the troops and positions there, and also to inspect the Shipka Passes over the Balkans.

Sir John Burgoyne returned to England according to his instructions and submitted to the British Government a full report on what he had seen and decided on. Meanwhile Lieutenant Burke carried out the mission with which he was entrusted, and wrote a description thereof to Sir John, of which the following extracts are of interest:—

"After leaving you at Schumla I went on with Dickson, Wellesley, and Private Cray, Royal Sappers and Miners, to Rustchuk, a few hours from which we met Omar Pasha. He was very civil, asked us to dinner, and invited us to take a ride with him down to the bank of the Danube, where he was going to inspect a battery in course of construction. When we reached the battery he fired a couple of shots from a 24-pounder gun at a Cossack picket house on the opposite bank, which made the Russians turn out from a village opposite. . . . . This was my first glimpse of the enemy and I saw them very well, as Omar Pasha was kind enough to lend me the telescope you gave him, a very good one, and which he seemed to like very much. . . . . Rustchuk is defended on the land side by a wide shallow ditch and a bastioned line of parapet with a demi-revetment, the whole of which is in a very bad state. These works are commanded by hills occupied by field redoubts, and the same remark applies to them as to those of Varna, they are not or were not of sufficient profile for so important a position, the guns in them were crowded and of very heavy calibre, and the parapets in a very bad state of repair. Ismail Pasha, the second in command of the Turkish army, arrived the morning we were about to leave. I went with Dickson (Royal Artillery) to pay my respects, and when he heard I was an Engineer officer he begged me to remain another day and go round the works with his chief engineer, and any remarks I made would be attended to. I was graciously pleased to comply with the great man's request, so with the General's chief engineer and an escort of cavalry I rode proudly round. The Chief Engineer was a renegade Pole, a very nice young man, but with somewhat wild ideas on the subject of fortification. We got on very well together, he spoke German, and all my suggestions were prefaced by first asking his opinion on the subject, at the same time giving mine. I found he always agreed with me by these means, and seemed much pleased at his own intelligence. He did not, however, seem to fancy the idea of cutting down an orchard which grows up to the very counterscarp, as it belonged to Said Pasha, the

Governor of the Province; but he said the instant the enemy made any move towards Rustchuk, down it should come. Whilst going round the batteries on the Danube side the enemy commenced firing at us with Minié rifles, which amusement they kept up the whole afternoon. One shot nearly expended me, it would hardly have been fair to shoot me so early in the season.* We went from Rustchuk to Sistova, and there landing upon an island which had lately been occupied by the Turks, we got very close to some Russian riflemen, in many spots not more than 200 yards distant, but I kept my head pretty close. The civil Pasha who accompanied us (the military one being away) crawled on his hands and knees. Cray, the Sapper, was delighted. I found him seated in a sort of musketry hole firing away at the Russian riflemen with three Arnauts loading for him. The red jacket attracted the fire very much, and whenever he exposed himself we were greeted with half a dozen shots. He was much disappointed when we took him away from his sport.† . . . . The Shipka Pass of the Balkans is about eighteen miles in length, from Gabrora, on the Bulgarian side, to Shipka on the Roumelian side, and is quite passable for cavalry and artillery. Its defences consist of two batteries (one unfinished) and a block house: the latter is not well situated, but would serve for barracks for the men who man the batteries . . . We were hospitably put up for the night at Eskilava by a rich Turk, who some months previously had purchased a very pretty slave for the large sum of £3000. I heard she generally walked in the garden of an evening, and wishing to see this pearl of price I pretended to lose my way going to the stable and opened the little door leading into the garden; but a female figure was all I saw, as I was suddenly jerked back into the lane and the door slammed in my face by a hideous Turk, all covered with pistols and daggers, who, however, smiled very pleasantly, and endeavoured to explain by a number of 'Yoks' that I was about to enter forbidden ground . . . . "

In the month of February, the 11th Company of Sappers, under Captain Hassard, started for the war, and landing at Malta were kept there until the arrival of the 7th Company, under Captain Gibb, when they both embarked with a battalion of the Rifle Brigade on board the *Golden Fleece*, for Gallipoli. On arrival there one Company was employed in constructing piers for the landing of stores, and in preparing the most suitable buildings to be used as hospitals; whilst the other was encamped at Boulair, where it was engaged in throwing up that portion of the lines which was apportioned for construction to the British, the remainder being carried out by the French.

---

* Poor Burke was, after all, the first officer of the British army killed in the war.

† This Sapper James Cray had been Sir John Burgoyne's orderly when he went up to Varna and Schumla. He was at this time orderly to Lieutenant Burke.

"The works at the intrenched camp at Bulair progressed with such speed that our portion of them was at this time (the end of April) expected to be finished by the middle of May. The emulation between the French and English troops at the diggings was immense, and at the same time most good-humoured. The lines were about seven miles long, and about $2\frac{3}{4}$ or 3 miles were executed by our men. They were simple field works running along the crest of a natural ridge from the Gulf of Saros to the Sea of Marmora. They consisted of a trench seven feet deep, the bottom from scarp to counterscarp six feet broad, the top thirteen feet broad. There was then a berm of three feet wide, above which was the parapet of earthwork (to be revetted in due course) of five feet thick, a banquette three feet six inches broad, and a slope inside of one in two."*

Following the first two Companies of Sappers came the 10th, under Captain Bent, intended to form the pontoon train, and the 8th under Captain Bourchier. These two latter Companies were taken to Constantinople, and placed in barracks at Scutari. At this time, with a view to future movements, the four Companies were told off each to a division of the army in the following order:—The 11th Company to the 1st Division, the 8th to the 2nd Division, the 7th to the 3rd Division, and the 10th or Pontoon Train to the Light Division.

It was now determined that the army which had been landed at Gallipoli should proceed to Varna. Colonel Tylden, R.E., had been made Brigadier-General, to take up the post of Commanding Engineer on Lord Raglan's staff, and he wrote to Sir John Burgoyne, on May 24th, from Constantinople, a letter which gives a very good account of the position of the Engineers at this moment:—

"As I stated in my letter of the 16th, General Cator, R.A., and myself accompanied Lord Raglan to Varna, on Thursday, and went over the works on Friday. We found them mostly in the state you left them, except that the heavy guns were removed from the outworks, and light ones substituted." . . . "I was ordered to return here the same night to forward a detachment of Sappers, with tools to repair the old wharf and construct a new one on the opposite side of the bay, leaving Wrottesley with Wagemann to make preparations and collect materials, Omer Pacha having given an order to the Pacha at Varna to furnish everything wanting in that way. Cator and I arrived here on Saturday at twelve o'clock, and I had all Constantinople ransacked to find proper tools and a portable forge, and only succeeded by 4 p.m. on Sunday. A detachment of Captain Bent's company, Gordon Pratt, 28 non-commissioned officers and men proceeded at once on board the *Caradoc*. Tuesday afternoon Lord Raglan returned, sent for me and gave orders for Captain

* Dr. Russell's "British Expedition to the Crimea," p. 44.

Bent with the pontoons, and the remainder of the company to proceed without delay to Varna; they are embarked and sail to-day." . . . . . "Lord Raglan has ordered up Captain Gordon, with Captain Hassard's company, and 1,000 entrenching tools from Gallipoli; they are expected to-morrow, leaving Captain Gibb with two subalterns to carry on the lines. Chapman and Lovell, Burke and De Vere are ordered in from Buyukchekmedjé, the survey of which has taken a long time, and is not yet complete. As I have been unable to ride out I cannot say if they have exerted themselves or not, but at present every thing gives way to the forward movement, and I think it is in contemplation to fight a battle as soon as possible to relieve Silistria, which is now invested by about 60,000 Russians. Simmons, who came down with Omer Pacha, told me the garrison consists of 15,000 Turks with provisions for three months; but I hear Omer Pacha does not think it will hold out more than six weeks." . . . . "I have posted the officers to the several divisions, and only wait Lord Raglan's approval; it is now before him. I think we shall advance with all our force, except one regiment at Gallipoli and one at Scutari, to take care of the hospitals and stores." . . . . "4 p.m. Scutari.—The French mail has come in and brought me your welcome letters of the 11th and 14th May, and a store ship is also reported as coming from Gallipoli with Engineer stores on board. I, therefore, hope we shall be able to take our place as we ought to do, but I see by a bill of lading, dated 12th May (the first of any kind I have received), that no trench carts are yet embarked. They are the most useful in conveying tools quickly. There is very great difficulty in procuring horses, and every exertion is making to procure horses and mules for the Commissariat; it would much have assisted the transport had they purchased mules at Gibraltar from Spain, and sent them on. With respect to the delay in our equipment, I am most glad to find the delay did not occur with our people during your absence; but it will be a good opportunity to impress on the authorities, whosoever they may be, that one part of an army being inefficient impedes the whole."

The change of base from Gallipoli to Varna was in consequence of the Russian advance and the commencement of the siege of Silistria. It seemed at the time probable that this undertaking would be successful, and that unless some step in opposition were taken it would be followed by the occupation of Bulgaria and a forward movement on Constantinople. The presence of the allied forces in strength at Varna would act as a powerful support to the Turkish army which was trying to hold the line of the Danube, and would much hamper the Russians in their future movements. At the same time neither the French nor the English were yet in a fit state to take the field, owing to the utterly incomplete character of their equipments. They were, however, able to push forward all the necessary preparations whilst holding the port of Varna, and they trusted before long to be in a position to undertake, if necessary, offensive operations in the Principalities.

The work of the Engineers on arrival at Varna consisted in the development of the capabilities of the place to become the base of operations, and the principal depôt for the stores of the army. The large Turkish barrack, which was found in a filthy and ruinous condition, was repaired, cleansed, and made fit for occupation as a hospital for the sick; store sheds were erected; piers and wharves were constructed, one on each side of the bay; fountains and springs were put in order, and the general water supply rendered efficient. All this had to be done with very inadequate means, and a great want of the necessary tools and equipments. There were at the time three Companies at Varna—the 8th, 10th and 11th, which had arrived with their respective Divisions. Many detachments were, however, gradually taken away. One in charge of Captain Bent was with the Turkish army under Omar Pacha; a second, under Lieutenant Stanton, was with the fleet in the Black Sea; whilst a third, under Lieutenant Lempriere, had been sent to the Asiatic coast to fortify Redoubt Kaleh, which had recently been abandoned by the Russians. In addition to these drafts on their strength, sickness and other causes soon reduced the numbers fit for duty at Varna to little over 200 men, who were clearly too few for the work thrown upon them. Assistance was procured by calling for volunteers from the line and navy, but the number of qualified artificers obtainable from these sources was not large. Native civil workmen were also tried, but the want of knowledge of their language interfered greatly with their usefulness, in addition to the fact that they were, even the best of them, very inferior workmen.

The means of transport for tools and materials were also miserably inadequate. A few native "arabas," or bullock carts, were all that could be obtained, and these only what could be spared from the transport necessities of the Commissariat. General Tylden, perceiving how the works suffered from this cause, and hoping also to assist somewhat in improving the mobility of the Sapper Companies, gradually introduced a light mule equipment, five of which were attached to each Company. They carried the ordinary pack saddle of the country, round which the intrenching tools and the chests of the carpenters and other mechanics were hung, and although very insufficient for the purpose as regards number, were found most useful as far as they went.

The hard work and pestilential climate had their usual effect upon both officers and men. Sickness soon became rife, and the Corps furnished its due quota of victims to the general malaria of the camp. Before long, however, it became apparent that the efforts which had been so gallantly made were not to be of any practical value. The siege of Silistria, a fortress which it had not been

anticipated could hold out for any length of time, was raised by the Russians in the middle of June, and all fears of an advance into Bulgaria and Roumelia were for a time at an end. This successful defence on the part of the Turks was mainly due to the heroism of three British officers, Major Nasmyth, Captain Butler, and Lieutenant Ballard, the latter being an Engineer, who arrived with Lieutenant-Colonel Simmons, and was left to take part in the defence with the other two who had preceded him.

On June 29th Lord Raglan wrote the following letter to Sir John Burgoyne, which touches upon many Engineer questions:—

"I am very glad that you have recommended that a trial should be made of the Emperor's pontoon, the construction of which would be attended with no great expense. I saw cavalry, infantry, and artillery pass over it successively and successfully, and I counted six guns upon it at the same time. . . . . The Engineers would like a certain number of Flanders waggons, well horsed, and I am fully alive to the importance of having in the field a sufficient body of Sappers, with all the implements they may require. . . . . I have withdrawn all the troops from Gallipoli except the 4th Regiment and one company of Sappers, and I shall keep the latter there until the huts, which are constructing for 1,000 men, and which are far preferable to tents, shall have been completed. . . . . The raising of the siege of Silistria is a great event. It is highly glorious to the Turks, and most humiliating to the Russians. I allowed Capt. Bent and Lieut. Burke to volunteer their services for Silistria; but the siege was at an end before they could reach the place. I shall have occasion to send Lieut. Burke to Redoubt Kali on his return."

This, unfortunately, was not to be, as on July 7th Burke met his end, being the first officer of the British army killed in the war. An attack had been made by the commander of the Turkish force at Rustchuk upon the Russians on the opposite bank of the river. Captain Bent led one of the divisions, and Lieutenant Burke another smaller party. Two Sappers accompanied the latter, Lance-Corporal William Swann and Private Andrew Anderson. The point that Burke attacked was an island, and on gaining the shore he formed his small force and led them against the Russians, who were holding the ground with greatly superior numbers. A desperate encounter ensued. Burke, who was a very powerful man, and whose valour almost amounted to foolhardiness, is said to have killed no less than six of his opponents before he fell, covered with wounds. The two Sappers stood by him manfully, and when he was killed Anderson dashed amongst the enemy and carried off the body. He was not, however, able to drag it far, owing to its great weight, and was compelled to leave it lying in the grass. The Russians made every effort to overpower the few men now left with only the

two British Sappers to lead them. Swann was desperately wounded; but Anderson, though he fought like a hero, was untouched. Eventually the party succeeded in regaining their boats, and retreated to their own bank of the river. The next morning Anderson returned to the island by himself, and recovered the body of his officer, which he found frightfully mutilated—even the fingers having been cut off to secure his rings. For his services on this occasion Anderson was decorated by Omar Pasha, in person, with the Order of the Medjidie.

The "London Gazette" of January 12th, 1855, announced that—

"The Queen has been pleased to grant unto Private Andrew Anderson, of the Royal Sappers and Miners, her Royal licence and permission that he may accept and wear the Order of the Medjidie, which the Sultan has been pleased to confer upon him, in approbation of his distinguished bravery and good conduct at the passage of the Danube, on the 7th of July last, and subsequently in rescuing the body of his commanding officer, Lieut. Burke, after he had fallen, and that he may enjoy all the rights and privileges thereunto annexed. And also to command that Her Majesty's said concession and especial mark of her Royal favour be registered, together with the relative documents, in Her Majesty's College of Arms."

Dr. Russell, in his "British Expedition to the Crimea," gives the following additional details of Burke's death:—

"When he first leaped on shore from the boat six soldiers charged him; two he shot with his revolver, one he cut down with his sword, the rest turned and fled. While he was encouraging the Turks, who were in the stream, to row quietly to the land, and forming them in line as they landed, conspicuous as he was in full uniform and by his white cap cover, a number of riflemen advanced from behind a ditch and took deliberate aim at him. Poor Burke charged them with headlong gallantry. As he got near he was struck by a ball which broke his jaw-bone; but he rushed on, shot three men dead at close quarters with his revolver, and cleft two men through helmet and all into the brain with his sword. He was then surrounded, and while engaged in cutting his way with heroic courage through the ranks of the enemy, a sabre-cut from behind, given by a dragoon as he went by, nearly severed his head from his body, and he fell dead, covered with bayonet wounds, sabre gashes, and marked with lance-thrusts and bullet-holes."

A detachment of Sappers under Lieutenant Pratt was sent at the request of Omar Pasha to Rustchuk, on July 8th, with some French pontoniers and British sailors to throw a bridge of boats over the Danube. Although the distance was only 120 miles, they did not arrive until the 13th, owing to the difficulties attending the transport of their tools. The whole party was mounted, and each Sapper led a second horse loaded with

materials. Neither Sappers nor sailors were very accomplished riders; they had considerable difficulty in controlling their horses, which were not accustomed to the rattling of picks and shovels on their flanks. On arrival at Rustchuk they were joined by Captain Bent, who took charge of the operations. Two separate bridges were constructed. One was a trestle bridge 450 feet long, over the Slobedsie Creek to an island in the river; the other was a bridge of boats across the main stream, nearly 900 yards long. The boats were placed about forty feet apart from centre to centre. The roadway was eighteen feet six inches broad. Being intended for very heavy work and to remain for some time, the baulks and planking were of an unusually solid character, the principal part having been obtained from Sistova and Widin. This bridge was begun on July 26th and completed on August 4th. On the 10th Omar Pasha opened it in person, and complimented officers and men on the zeal and ability they had shown in its construction.*

On the night of August 10th a disastrous fire broke out at Varna, by which large quantities of stores of every description were destroyed. It is mentioned here because of the gallantry displayed on the occasion by Lance-Corporal James Cray, whose name has already been mentioned as Lieutenant Burke's orderly. The official report said of him—

"When the danger was greatest and the spreading flames threatened to reach the large Turkish powder magazine, Corporal Cray laboured voluntarily and incessantly by mounting scaling ladders and closing the openings with blankets, thus not only largely contributing to the safety of the magazine, but setting an example to the sailors and others assisting, which was of the greatest service."

In consequence of this report Corporal Cray received promotion.

At the beginning of this month (August), a joint French and British expedition was sent to the Baltic to destroy the Russian works in the Aland Islands. The main portion of the land forces was French, but Brigadier-General H. D. Jones, R.E., was placed in command of a small body of British troops consisting of a battalion of Marines and a Company of Sappers. The Engineer officers who took part in the operations under General Jones, were Captain H. Ord (Brigade-Major), Lieutenant J. Cowell, A.D.C., and Captain F. W. King, with Lieutenants C. Nugent, and the Hon. C. Wrottesley, attached to the 2nd Company R. S. and M.

It was found after reconnaissance that the enemy's works consisted of a main fort casemated and heavily armed. This was

* "The Times," September 15th, 1854.

covered by three circular granite towers, two, viz., Tzee and Nottick, being on the large island, whilst the third was on a small island called Presto, and closed the line to the right. This tower bore the same name as the island. The country was one mass of granite, with an extremely rough and rugged surface, huge boulders covering the ground in all directions. It was, therefore, quite impossible to sink trenches, both batteries and approaches had to be formed of sandbags, with a few gabions and fascines, for which the materials were found in the dense pine woods that surrounded the spot. The principal operations were carried on by the French, the British, from their slender numbers, taking a very subsidiary part. The troops were landed in the early morning of August 8th, and pushed forward to the vicinity of Bomarsund. Here, on reaching the west of the position, the French halted, and the British proceeded to take up their ground farther to the north.

It was determined to commence the attack by capturing the two towers of Tzee and Nottick, the French constructing batteries against the former, whilst the British threw up one for three 32-pounder guns on a hill about 1,000 yards from Nottick. The French works were completed and opened fire on the morning of August 13th, and in the course of the day so crushed the tower that during that night they were able to take possession of it, and make prisoners of such of the garrison as had not retired into the main fort. On the following day the British completed their battery, which was handed over to the sailors to work the guns. Four 12-pounder howitzers were brought up and placed under rough cover to the left.

At 8 a.m. on August 15th fire was opened, and in a very few hours produced a marked effect; so much so that at 5 p.m. the garrison surrendered. Unfortunately, during the course of the morning a round shot entered the battery, mortally wounding Lieutenant the Hon. C. Wrottesley, R.E., who was in charge of the working party.* On the following day the French opened a battery against the main work, which was at the same time assailed in front by the ships. In a few hours the garrison surrendered most unexpectedly, two thousand men laying down their arms and being made prisoners. The business of demolition was now promptly begun. Captain King was left with his Sappers to aid in the operation, most of which had been hurriedly done by the French. After their departure he completed what they had left unfinished, and destroyed

* Lieutenant Wrottesley died two days afterwards, on board the hospital ship, *Belleisle*. Lieutenant Cowell, R.E., was also lying in the same ship, wounded by the accidental discharge of his own pistol.

a number of casemated works which were at the time in course of construction. This lasted till the middle of September, when the Company was taken off the island in H.M.S. *Ajax*.

The question of the invasion of the Crimea came on the *tapis* almost immediately after it was made evident that a Russian advance into Bulgaria was no longer to be feared. On July 20th a party of French and English officers, amongst whom was Captain Lovell, R.E., were sent in H.M.S. *Fury* to reconnoitre the harbour of Sebastopol and the coast near it, with a view to report upon the practicability of a landing, and to select the most suitable spot. They succeeded in approaching the mouth of the harbour in the night sufficiently near to make a close inspection of the formidable batteries by which its entrance was guarded, after which they coasted leisurely along the western shore, and having carefully examined the various points on which a landing on a large scale could be effected, decided that the mouth of the river Katcha appeared, on the whole, to afford the greatest facilities. They were, however, utterly unable to ascertain the real numbers of the Russian force then in the Crimea. All they could state was that apparently from fifteen to twenty thousand were encamped in and about Sebastopol and the Katcha.

General Tylden, in a letter to Sir J. Burgoyne, dated Varna, July 29th, says:—

"Lovell is returned and is making out his report. He reports favourably of a spot on the second stream north of the harbour, and the Fort Emperor or Constantine, as it is called, stands further back than is shown in the maps, and that the ground is stiff clay. This is, so far, favourable.

". . . . . Our force is far under what it ought to be. Gibbs' company still at Gallipoli, and Lord Raglan will not order them up till the huts are finished; and Bent, one officer, and thirty-seven men at Giurgevo, so that we shall not have much more than 200 men for the trenches. The French have 1,200, but General Bizot" (commanding the French Engineers) "is very anxious that we should take as many of our Sappers as possible, of whom they seem to have a great opinion."

Meanwhile, on July 19th, the commanding officers of Artillery and Engineers had been directed—

"To prepare for an operation of great importance in which a siege equipment will be required; the Engineers being further called on to fit up vessels adapted for the conveyance of horses and powder, and to construct such other works as might be required to facilitate the operation of embarking troops."

This new work necessarily occupied the entire attention of the Engineers, all other duties were suspended, the Companies were concentrated in and about Varna, and obtained the assistance

of every available carpenter from the line and navy. The sole exception was that a detachment of twenty-five Sappers, with a Staff Captain of Engineers, was allotted to each division to instruct the soldiers in throwing up earthworks. The piers that had already been constructed were handed over to the French, and three additional wharves were erected on the south side of the bay for the embarkation of the British troops.

Large parties were employed making gabions and fascines, there being an abundance of good brushwood in the vicinity of the camps. Before the end of August about 6,000 gabions and 8,000 fascines had been completed. The provision of timber for platforms, splinter proofs, &c., was more difficult, there being a great scarcity of suitable material; what there was being mostly oak, and curved for ship-building purposes, which gave much trouble in converting to siege use.

The 4th Company of Sappers arrived at this time from Malta, under Captain Craigie, R.E., and made a welcome addition; a little later on a detachment of thirty-four Sappers under Lieutenant Teesdale, R.E., also joined from Corfu, bringing up the strength of the Corps to about 350 men. At the same time Sir John Burgoyne arrived, having been sent out specially to give Lord Raglan the benefit of his professional experience.

On August 27th the shipment of all the siege material had been completed, and the Engineers embarked a few days later with their respective divisions of the army. The rendezvous for the entire combined French and British force was the Isle of Serpents, where the French and Turkish fleets had already assembled. On September 11th the expedition started in about 360 vessels, of which fifty were men-of-war steamers, thirty-four line-of-battle ships, and many of the remainder commercial and mail steamers of the first class. The British fleet was divided into seven columns, five being for the respective divisions, the sixth for the cavalry, and the seventh the siege train. Each steamer towed two sailing transports. The flanks were guarded by the men-of-war.

On September 13th the fleets halted in the Bay of Eupatoria. It had been determined to secure this point in accordance with the recommendation of Sir John Burgoyne, who had shown that a small force at this place would cover the rear of the army in its advance on Sebastopol, that it would intercept and harass the enemy's convoys coming from the north, and in case of disaster would form the most suitable port from which to re-embark the troops. It was summoned and promptly surrendered. A body of 500 Marines was landed for its occupation, and with them a detachment of Sappers, under Lieutenant Baynes, R.E., who

were directed to throw up intrenchments to cover it on the land side.

The same night the fleet sailed for Kalamita Bay, where a low shelving beach, about eighteen miles to the southward, near a place called Old Fort, had been selected as the scene of disembarkation. It had originally been intended to land at the mouth of the Katcha, and the Russians, who apparently were well acquainted with the general scheme of invasion, had made their arrangements for a strenuous opposition at that spot. The change in plan came therefore upon them as a complete surprise, and when the operations began on the morning of September 14th, there was no sign of an enemy. The men were all landed in the course of the day, but it was not until the 18th that the stores and equipments, horses and artillery, had reached the shore, and the army in a state to commence its advance.

The Engineer force consisted of twenty-three officers and 323 Sappers. The names of the Officers were :—Lieutenant-General Sir J. Burgoyne, Brigadier-General W. B. Tylden, Lieutenant-Colonel C. C. Alexander, Captain J. W. Gordon, Captain F. F. Chapman, Captain and Brevet-Major R. Tylden, Captain A. D. Craigie, Captain J. W. Lovell, Captain E. F. Bourchier (Brigade-Major), Captain H. W. Montagu, Lieutenants C. B. Ewart, P. Ravenhill, J. Murray, F. H. De Vere, J. M. Stopford (A.D.C. to Sir J. Burgoyne), G. Neville, A. Leahy, C. S. Baynes, H. G. Teesdale, J. M. Graves, G. Graham, C. N. Martin, and F. E. Pratt. On the morning of the 19th the army advanced towards Sebastopol, and after a slight affair with the enemy's cavalry and artillery, camped for the night on the banks of the Bouljanak. On the morning of the 20th they advanced to the Alma, where the whole Russian army was found posted behind the river, prepared to dispute their further progress. The position taken up was a very powerful one, but in less than three hours they were defeated and driven away. The French, under cover of the fleets, advanced on the right, whilst the British attacked on the left. The following account of what he saw and did on the occasion was written immediately afterwards by Sir John Burgoyne, dated Camp on Alma, Crimea, September 22nd :—

"The Russians fought gallantly, but they could not withstand the steady, persevering gallantry of our troops. We took a very strong position by a direct front attack ; for the French turning it was not sufficiently prolonged to be of other service than the important one of drawing off a considerable force to oppose them. *Their* work, however, was comparatively easy, for they gained the heights without much opposition, and then were on even terms with the enemy, while *our* attack was over a river that, though fordable,

could only be crossed in broken order, from natural impediments, above which was a fine range of heights of from 60 to 150 feet high, about 600 or 800 yards distant, and on each flank commanding pinnacles of 300 or 400 feet high; that on the right (the key to the whole), with a steep sloping rise as smooth as a glacis; midway up it a trench of some hundreds of yards long for cover, and both sides powerfully flanked by artillery. This eminence was boldly assailed and carried, and so close was the contest that it was literally covered with killed and wounded, the most advanced of which, Russians and British, were heaped together. It was really a trial of vigour and fortitude, the result of which has made apparently a great impression on our French allies, as it must have done on the enemy, who at length went off in great confusion. As Marshal St. Arnaud said to me this morning, with regard to the action generally, that the moral effect of the day was worth an addition of 20,000 men. The only casualty in our party was Teesdale, broken arm just above the wrist, and my horse grazed on the hind leg."

The wound here referred to in Lieutenant Teesdale's arm unfortunately proved mortal. He died from its effects at Scutari very shortly afterwards.

Lord Raglan, in his despatch describing the action, says:—

"Lieut.-Genl. Sir John Burgoyne was constantly by my side, and rendered me, by his counsel and advice, the most valuable assistance, and the Commanding Royal Engineer, Brigadier-General Tylden, was always at hand to carry out any service I might direct him to undertake. I deeply regret that he has since fallen a victim to cholera."

On this point Sir J. Burgoyne writes on September 24th:—

"Our good General, who was riding with me on the afternoon of the 21st, and was taken ill with virulent cholera that night, died at 10 p.m. on the 22nd, and was buried, with all the form we could give it, in a vineyard at 7 a.m. on the 23rd, immediately before we marched."

Captain W. M. Inglis and Lieutenants A. J. Creyke, G. Philips, O. H. Stokes, and J. F. D. Donnelly, with a draft of sixty-six Sappers for the 3rd Company, joined the army on the 23rd, having arrived too late for the battle.

The victory of the Alma marked the conclusion of the great primary object of the campaign—to throw upon the enemy's shore a large army, with all its equipments, and then within a few days to inflict upon them a crushing defeat, rendered all the more humiliating in that the scene of the action was on ground carefully selected by themselves and prepared with all deliberation. These successes proved conclusively that the Russians were not able to withstand the allied forces in the open field unless in vastly superior numbers. Disheartened and demoralized, they had retired behind the shelter of the works of Sebastopol. It

now, therefore, only remained to advance on that point, capture the fortress and demolish the proud arsenal which had been created at the cost of so much labour, ingenuity, and expense; that once accomplished, the power of Russia in the Black Sea would be at an end for many a long day.

This, then, was the task now set before Lord Raglan and Marshal St. Arnaud, and we find Sir John Burgoyne at once comprehending the problem and submitting his proposals for its solution. The flank march by which Balaklava was seized, and a new base established in close proximity to the point to be attacked, was such an important factor in the campaign, that it will be well to give Sir John's original memorandum *in extenso*. It was drawn up on the morning following the battle of the Alma, being dated—Camp on the Alma, September 21st, 1854:—

"I would submit that unless some impending circumstances occur which cannot now be foreseen the combined armies should at once move round to the south side of Sebastopol, instead of attacking Fort Constantine, by which the following advantages may be anticipated:—1. That instead of attacking a position naturally strong and of limited extent, to which a powerful support will be given by Fort Constantine, which is a permanent fortification, though by no means formidable if insulated, the enemy would have to defend a very extensive line divided by valleys and, from every information, very imperfectly, if at all, intrenched, and which would probably be forced rapidly. 2. As the advance is from the north, our attack will rather be expected on that side, and not on the south. 3. Even supposing Fort Constantine to be taken, although it will open the shipping, dockyard, &c., to a cannonading, it does not insure entire possession of the important establishments until after a second operation, which may still require us to move round to the south, while the enemy will retain to the last free and open communication to the place. 4. There is every reason to believe, from the appearance of the maps and from what may be expected to be the formation of the ground, that there is a very strong position between the sea at Balaklava and along the valley of the Tchernaya that would most efficiently cover the allied armies during the operation, but is too extensive to be taken up by the garrison. 5. That this communication with the fleet, which is, in fact, our base of operations, would be far more secure and commodious by the small harbour of Balaklava and the bays near Cape Chersenese than on the open coast to the north, and with the advantage of a good road from Balaklava to the attacks, and a very easy country to pass to them from the bays near Cape Chersenese. 6. Under ordinary circumstances such a movement would have the effect of exposing the communications of the army to be cut off, but in this case the idea is to abandon the communication from the north altogether and establish a new one to the shipping in the south, which would be moved round for that purpose."

Lord Raglan saw the soundness of the arguments and the value of the advice, but was anxious that Marshal St. Arnaud should give his opinion on it before he would commit himself. Burgoyne was therefore sent to the French head-quarters to discuss the question. St. Arnaud, like Lord Raglan, was strongly in favour of its adoption; but many of his staff, especially General Bizot, of the Engineers, and Colonel Trochu, opposed it with much warmth. At length the Marshal broke up the conference, saying that he agreed with General Burgoyne, that difficulties which appeared great at a distance often disappeared on nearer approach, and that it was *un mouvement en avant*, and so he decided in its favour.* Many of the British staff also were against the measure, and the same reason was used by all — viz., that the general scheme of the campaign was a sudden landing, a pitched battle, and following that, if successful, a *coup de main* to seize the fortress. Dr. Russell, in his history of the expedition, puts into the mouth of Sir Edmund Lyons this side of the question very plainly :—

"This is strategy, but we are in no condition for a strategical operation. We came here for a *coup de main*, but this is strategy."†

Whatever objections were raised to the scheme before it was undertaken appear to have been withdrawn as soon as it was in progress. Sir John himself records that Colonel Trochu said to him "Quelle belle manœuvre que nous allons faire!" and after it was accomplished Colonel Steele remarked, "Well, Sir John, we owe all this to you;" whilst Sir Edmund Lyons himself said to Mr. Layard, "Sir John Burgoyne seems to be gifted with second sight, for everything he said and predicted has turned out true."

The famous flank march was most successfully accomplished. Leaving a small force to make a show of threatening the north side and thus to cover the movement, the entire allied army left the Belbec on September 25th, and steering by compass in a south-easterly direction, through a dense wood and by a single road they reached the plain of Balaklava the next morning, having on the way surprised a quantity of the enemy's baggage which was retiring on Simpheropol.

Little or no resistance was offered on their arrival, and Balaklava, with its harbour and the surrounding hills, fell at once into their possession. Having thus secured their new base of operations and re-established their communications with the fleet, the allied forces advanced towards Sebastopol. The British took up a position on

* Wrottesley's "Life of Sir John Burgoyne," vol. ii. p. 93, note 2.
† "British Expedition to the Crimea," p. 164.

the western side, whilst the French did the same on their right. A very brief reconnaissance showed them that the place was far stronger than had been anticipated. It was therefore decided not to risk an immediate assault. The following account of the fortress as it stood at this time is extracted from Elphinstone's journal of the siege:—

"An extensive inlet of the sea, called the harbour of Sebastopol, which runs inland to a distance of nearly four miles, divides this fortress into two distinct parts, a north and a south side, perfectly separated from each other. The only means of communication between them is either by boat across this harbour or else by making on land a circuit of many miles. . . . . The principal defences faced the sea, and on that front the works were of a permanent character and armed with powerful batteries. At the entrance of the harbour on the south side stood the two forts of the Quarantine and Alexander, mounting 60 and 90 guns respectively; the former a closed earthen redoubt with its guns mounted *en barbette* commanding the Quarantine Harbour; the latter a permanent work of masonry, casemated, and likewise closed at the gorge by a crenelated wall. This latter fort, conjointly with the magnificent casemated batteries of Fort Constantine (110 guns), opposite to it on the north side, commanded the entrance of the harbour, and both were supported and flanked by powerful batteries to the east of them, placed at distances varying from 500 to 1,000 yards. These consisted, on the south side, of the Artillery Fort (an earthwork with 56 guns), and of the extensive casemates for 200 guns called Fort Nicholas; and on the north side, of the casemates of Fort Michael for 90 guns, of two minor earthen batteries, one on each side of the latter, and of the extensive earthworks called Battery No. 4. This front had been still further strengthened by moving several men-of-war, so that their broadsides might sweep the entire harbour, and as a greater security against a naval attack seven vessels had been sunk at the entrance of the harbour, answering the purpose of an outer boom, supported at about 1,000 yards in rear by a second boom formed of iron cables. . . . .

"On the land side the works of defence to the south of Sebastopol were at this time comparatively trifling, but they occupied very commanding positions, and were placed on ground which nature had strongly fortified. A simple stone wall, crenelated, but quite exposed, surrounded part of the town and extended, partly as a bastioned trace and partly as an indented line, from Artillery Bay to the Central Bastion. A wide and steep ravine ran in front of the line, and so completely separated it from the ground beyond that all approaches by trenches on that side were subsequently found to be quite impracticable. To the south-east of the Central Bastion, but separated from it by a deep ravine, across which a dry stone wall had been hastily constructed, and armed with about 24 field-pieces, was an earthen battery nearly completed, called the Flagstaff Bastion, occupying a very commanding site and furnished with 12 heavy guns. . . . .

"On the eastern side, which was perfectly separated from the western by the deep and precipitous ravines at the head of the dockyard creek, were the following works.

"1st. An earthen battery, called from its shape the 'Redan,' which was armed with 17 heavy guns, and at which large working parties were still busily engaged. Immediately in its rear a dry stone wall skirting the brow of the hill, branched off in a westerly direction to a place subsequently called the Barrack Battery, where at present 10 field-pieces were in position to flank the Redan, and the ground to the west of it, and in the valley just beneath it at the head of the Dockyard Creek, about a dozen field pieces, protected by a low stone wall, fully commanded all the approaches to the town from the valleys beyond.

"2nd. The semi-circular masonry tower of the Malakoff, mounting five heavy guns *en barbette*, around which was a circular intrenchment with a short flank at each end nearly completed, and armed with 10 heavy guns.

"3rd. A battery called the little Redan, still incomplete, but most probably armed.

"4th. Adjoining the harbour a considerable-sized stone building in the shape of a cross, which had been converted into a defensible barrack."

Such was the fortress which it had been imagined could be taken by a *coup de main*. It is, of course, possible that such a measure might, owing to the demoralization of the defenders, have been successful. In after days, the Russians were fond of pointing out that this could and should have been done. No one, however, who studied the question without bias could form such an opinion. The hazard of a failure was extreme, and must have involved the sacrifice of the entire allied army, causing the ignominious termination of the enterprise. On the other hand, the allies had secured a favourable position from which to crush the enemy's defences with their artillery fire, and the means of doing this were at hand in the form of an ample siege train about to enter the harbour. It was not imagined that the defence would be prolonged. On the contrary, the general opinion was that a few days of open batteries would lead to a surrender without the necessity of delivering any assault; and even were that not to prove true, the assault would be greatly facilitated by the previous fire.

Events showed that this opinion was fallacious, and the siege dragged its slow length along for a year before victory crowned the enterprise. It is, however, quite clear, looking at events as they occurred, that this protracted defence was fatal to Russia. It became a point of honour with her to continue the struggle in a position very far removed from her resources, and to which reinforcements of men and materials could only be conveyed by long

and exhausting land transport. On the other hand, the allies were close to the sea, and everything for the necessary maintenance of their attack was easily to be conveyed to within a few miles of their trenches. What wonder then that, with such unequal conditions, the vast resources of the Russian Empire were practically dried up in one short year, and the loss of her stronghold led to her sueing for peace. How different would have been the position if the place had fallen at the first onset. The arsenal and dockyard would have been destroyed, it is true, but the war would not have been ended. Russia would have been humbled, but not materially weakened, and the struggle might have been protracted for several years, and with very uncertain results.

On September 29th Lord Raglan issued an order that—

"The British army will carry on the attacks on the left of the enemy, and for this purpose will move to the right until their right is beyond the west of the ridge on which there is a large advanced white tower of the enemy."

The next step was a conference between Sir John Burgoyne and General Bizot. It may here be mentioned that on the death of General Tylden the post of Commanding Royal Engineer devolved on Lieutenant-Colonel Alexander, without, however, any accession of rank. Sir John Burgoyne was considered a professional adviser to Lord Raglan, but without any specific command over the Corps in the Crimea. At this conference it was decided—

"That the best sites should at once be selected for batteries against the enemy's ships, masonry, buildings, and prominent earthworks, to reduce the fire from these in some degree prior to assaulting, and that the wide ravine which runs down immediately upon the Dockyard Creek should form the line of demarkation between the French and English operations."

The time between September 29th and October 10th was employed in landing and bringing to the front the siege guns, and as far as possible the materials for the establishment of the necessary batteries; also in the erection of two of these at points considered most likely to prove useful. The first was for two Lancaster guns to the left of the Woronzoff Road, intended to batter the ship at the head of the Dockyard Creek. The other originally designed for two Lancasters was afterwards extended to contain five guns of heavy calibre to batter the Malakoff Tower. These two were completed and armed on the nights of October 9th and 10th respectively. They were retired so far back as to be practically out of reach of the enemy's fire, whilst their own guns, which were presumed to have a range of 4,000 yards, would yet prove effective.

On the night of the 10th a parallel was opened on the left

British attack, about 1,000 yards in extent, and at a distance of from 1,300 to 1,400 yards from the Russian lines. In this parallel was established a series of batteries, which were completed and armed by the night of the 16th. They contained three Lancasters, eight 8-inch and twenty-five 24-pounder guns, with five 10-inch mortars. They were afterwards known by the general name of the Greenhill or Chapman's Battery.

On the right attack the trenches were not opened until the night of the 11th, but their batteries were ready and armed at the same time as those on the left. They consisted of a series known as Frenchman's Hill or Gordon's Battery, and contained two 10-inch and one 8-inch Lancasters, four 68-pounder, seven 32-pounder, six 24-pounder, and seven 8-inch guns, with five 10-inch mortars. There were thus seventy-three pieces of ordnance in place and ready to open fire on the morning of October 17th. The French had meanwhile mounted fifty-three guns in their works, so that there were, on the whole, 126 pieces of ordnance.

At 6.30 a.m., on October 17th, the bombardment opened, and was continued with the utmost vigour till nightfall. The fleet was at the same time directed to engage the batteries on the sea front, and at 1 p.m. opened upon them. The result of the day's work was, that the British fire had almost completely crushed the Russian works opposed to them. In four hours the Malakoff had been silenced, and in the course of the afternoon a great explosion in rear of the Redan had left only three guns serviceable. Unfortunately, the French did not prosper so well. Their artillery, which was much lighter than the British, was unable to contend against the heavier metal of the Russians, and early in the afternoon they were compelled to cease fire. The fleet retired at dusk, having suffered considerably, without having been able to inflict much injury upon the powerful casemates opposed to them. Everything had been prepared for an assault. The troops were ordered to fall in at a moment's notice without knapsacks or great-coats; all the field batteries were horsed. To each attacking column an Engineer and twenty Sappers had been told off, with scaling ladders, crowbars, and intrenching tools. All was ready, and only awaited the signal. The Russian fire had been so far crushed that it was hoped and expected that all would go well. It was not, however, to be. The French were of opinion that if the attack could be deferred they would be in a position to open fire on the following morning with better success. A postponement was therefore agreed to. When the next day came they were not ready. The British had to sustain the bombardment unaided. The Russians, making the most of their opportunity,

had mounted a large number of additional guns, and our superiority was lost. On the 19th the French once more opened their fire; but it was now too late, and before that day closed it was clear that the Russians had established an overwhelming preponderance in the artillery duel. The magazines were now nearly exhausted; it therefore became necessary to cease fire, and indefinitely to postpone the assault. This was the first step in the long chain of events which protracted a siege intended only to have lasted for a week until a whole year had been expended in its prosecution.

Whilst this work was going on Lieutenants H. C. Elphinstone, Lennox, and Lempriere had joined the ranks of the Engineers at the siege. They had, however, sustained the loss of their new Commanding Royal Engineer, Colonel Alexander. The following letter to Colonel Matson, from Captain Gordon, who by this death became Commanding Royal Engineer, gives an account of the event:—

"I cannot enclose you the accompanying melancholy return of the death of Colonel Alexander without sending you a line to accompany it. Alexander was deeply impressed with the view that our army had undertaken an enterprise beyond its strength, and beyond its *matériel*. His anxious temperament became excited, and he could not rest. Often he lay down at night in his clothes, and he was in the saddle frequently during the night, and always at early dawn. Still, no one suspected that he was otherwise than well. On the evening previous to his death he complained of a violent headache. He would not remove his clothes and go to bed; but he lay down with his coat buttoned, and with his boots and stock on. At about 10 p.m. he felt a desire to vomit, but could not do so, and then to all appearance he fell asleep, complaining of cold, upon which extra clothing was thrown over him. At about 4 a.m. his interpreter heard a gurgling in his throat, and roused the doctor, who drew blood from his temple, but could not draw any from his arms. He died from over-anxiety; he sacrificed his life for his country as truly as if he had fallen in the field of battle. Sir John Burgoyne having reported to Lord Raglan that the Engineers' operations had been most successfully accomplished, it may on such authority be said also that the solid triumph of success was his, though not attended with the *éclat* of victory. I have written to Capt. Boyle all these particulars, and I feel that I have lost one of the best friends I ever had, and a commanding officer under whom I delighted to serve. I am put in orders as C.R.E., under the orders of Sir John. It matters not by what name I am called, for there is but one C.R.E., and that is Sir John. . . . . Major Tylden has taken my place as a director of attack, and Sir John has sanctioned Lovell being employed as brigade major."

Lieutenant-Colonel Alexander died on the morning of October 20th.

The report referred to by Captain Gordon in his letter was as follows:—

"I would call Lord Raglan's attention to the great and successful exertions of the Royal Engineers and Sappers under very trying circumstances. The rocky soil presents the extreme of difficulties to the establishment of trenches and batteries; the very act of obtaining cover in one night on such soil, which was done on every occasion, requires a great effort, and to construct in it substantial batteries still more. The proportion of good platforms and stuff for magazines embarked was too insignificant to be worthy of notice. These objects had to be prepared (and for a very heavy description of ordnance) from the irregular masses of timber and plank that could be procured from buildings pulled down. Notwithstanding all these difficulties the work has been pushed on with rapidity; the substantial nature of the parapet has been proved by the few casualties incurred, and the embrasures and platforms have required during the very heavy cannonade of yesterday, less repairs and adjustment than I have ever been witness to on similar occasions, and no accident has occurred to any magazine, although some shells have been observed to explode on them, all proving the substantial goodness of the works executed."

Although the assault had been postponed to an indefinite period, still, all idea of its early adoption was not abandoned. The French were pushing forward their advance, and expressed hopes of being shortly in a position to deliver an assault on the works in their front. They even made proposals that the British troops from their left attack should aid in such an effort by assailing the flank and rear of the enemy's position in immediate support of the French attack in front. Instructions were therefore issued to the British Engineers of the left attack to study the ground well and prepare everything for such a movement. It was intended that at the same time the British right attack should assault the Redan. An interesting letter on this point was written by Sir George Cathcart a few days before his death in the battle of Inkerman, of which the following are extracts:—

"Although I know little about the scientific part of the business, yet, as having been a careful and somewhat interested observer from daylight to sunset now for nearly five weeks of the things going on in my front, and as I at last expect to have the honour of giving the *coup de grâce* with my division, I send you a hasty scratch, merely to explain what I mean. . . . Our best hopes of success in making our lodgment in the Redan, in my opinion, rest on a sufficient provision being made, in our arrangements for the assault, for throwing in at least a couple of battalions into the village marked A, with strict orders not to tarry there but to push on to get round the Redan and take the flanking guns in flank; then if we go at the embrasures on both flanks with two other battalions, giving the salient angle a wide berth, for there is certainly a mine there in front of

it, some of us will get in." . . . . "If the walls behind are loopholed as a bit of one I can see seems to be, we must have Engineers to the front to scheme for us." . . . .

All these ideas of bringing matters to a crisis were exploded by the incidents of the next few days. The Russians having received ample reinforcements, had already begun to assume the offensive at many points, and to hamper the siege operations of the comparatively feeble force in their front. At this time the British were spread over a distance of not less than nine miles, and the reduction of their numbers through sickness had become so pronounced that they were incapable of occupying, far less of protecting, so vast an extent of ground. Much anxiety had been from the first expressed by all who were capable of forming an opinion on the subject at the weakness of their right flank, but it had been found impracticable to strengthen it either by men or intrenchments, owing to the paucity of numbers. Matters were in this position when the Russians began to take advantage of their superior strength. Their first advance was from the line of the Tchernaya against the Balaklava base on the morning of October 25th. In this they were not successful, although they compelled the allies to abandon a line of redoubts which were held by the Turks. They also annihilated the British Light Cavalry Brigade in the ill-considered though heroic charge which has become so famous. On the following day they made a reconnaissance in force on our unprotected right flank. This was driven back, but their object had been gained; they had learned how feeble the position was, and prepared to strike a blow which should crumple up the attacking forces, and drive them into the sea.

On the grey morning of November 5th, the attempt was made. Nothing but the undaunted steadiness of the British infantry saved the country from a disaster almost without a parallel. It must at the same time be admitted that the marvellous rapidity with which a French division was brought up to our support greatly helped in discomfiting the enemy. It has been justly said that no troops but British could have held their ground so long and so stubbornly, and none but the French could have covered the five miles which lay between them and the point of attack with such lightning speed.

The effects of the battle of Inkermann appear to have been very much the same in both the contending armies. The severe losses of the British falling upon battalions already sadly attenuated by sickness, were such as to annihilate all hope of any offensive operations until large reinforcements had been poured in. On the side of the Russians, the crushing defeat they had sustained in spite of their overwhelming superiority, and all the advantages

resulting from taking their enemy by surprise, seems to have rendered them averse from undertaking any further active operations. The attack and the defence both gradually subsided into a sullen tranquillity.

The besiegers prepared to encounter all the rigours of a Crimean winter, only adding slightly to their trenches and batteries. The defenders devoted their energies to the further development of their works, varied every now and then by a small sortie upon one or other of the advanced trenches, sufficient to annoy the besiegers but of no other service. The news of this practical cessation of active operations was received with the utmost disappointment in England, where hopes had been entertained that the fall of the place would speedily occur. Sir John Burgoyne, as the professional adviser of Lord Raglan, was made the object of much unmerited blame and abuse. It was very freely said that his ultra caution had held back the troops when their chief would have launched them to the attack. His own staunchness and loyalty to Lord Raglan led him to bear these aspersions in dignified silence, and the gallant old man, who was eating out his heart in bitterness at the sight of wasted opportunities, bore without complaint this yet more grievous burden, that he was himself supposed to be the cause of the failure.

When the first day of the bombardment of October drew to a close, and the Russian batteries opposed to the British had been well-nigh crushed, and when the troops were all assembled in the trenches awaiting the signal to advance, Sir John was there as eager as the youngest subaltern. Those who were then with him marked well the expression of his face when the order came that the assault was to be postponed. On that occasion General Todleben (as he himself afterwards repeated) was more apprehensive than at any other moment of the siege. His guns were silenced, he could see the British trenches swarming with troops, and he expected every moment that they would be upon him. The publication of the various memorandums and letters of Sir John, shows that he never lost an opportunity of preparing for an assault, and that he was always hoping against hope until the last favourable opportunity had passed away owing to the slaughter of Inkermann. Even as late as November 2nd he wrote to Colonel Matson—

"It appears to me that the French are over-cautious, and too much bound by system and ordinary method for our pressing circumstances. They have their approaches within 300 or 400 yards of the front of attack, the works of which are greatly ruined, the guns silenced, the parapet a heap of rubbish, no ditch or obstacle to it or the adjoining line, which has itself great openings in it, and yet they hesitate to storm.

. . . . The only way I believe for Lord Raglan to act, not to appear to shrink from taking our part, will be to offer to join with British troops in the assault in front of the French attack." . . . .

It was not, however, to be; the French declined the attempt, and it was many a long month before they were in a position to renew it.

Although the active efforts of the besiegers had been compulsorily much suspended, still efforts were continually made to advance the trenches, and develop the attacks as far as the very limited means available to the Engineers permitted. It was, however, with the utmost difficulty that any working parties of the line could be procured, and day after day the report recorded that no men were to be had.

On November 14th a fearful hurricane visited the coasts of the Crimea, causing the utmost misery in the allied camps, and what was still worse, a terrible loss of shipping. Eleven British vessels, including one large steamer (*The Prince*), were dashed to pieces on the rocky coast outside Balaklava harbour, and seven others dismasted. In *The Prince*, Captain W. M. Inglis, R.E., was drowned, as were also a Serjeant and three Sappers, who had come out from England with apparatus for destroying the Russian men-of-war sunk at the mouth of the harbour. Most unfortunately *The Prince* contained the whole of the warm clothing that had been despatched for the winter use of the troops. They were therefore left to encounter its rigours for a long time unprotected before a fresh supply could reach them.

A very gallant little episode occurred on the night of November 20th. The Russians had greatly strengthened their advanced posts in front of the British left attack, and had established a chain of rifle pits within 250 yards of the second parallel then recently formed. From these pits they galled not only the British trenches but also those of the French attack, which they were able to enfilade. It was therefore determined to attack them, and, if possible, establish a lodgment which could be eventually connected with the parallel. Lieutenant Tryon, of the Rifle Brigade, commanded the assaulting column of 200 men, with whom was a working party of 100 men under Lieutenants Lennox and Philips of the Royal Engineers. The affair was quite successful; the pits were captured, and the working party, under the guidance of the two Engineers, formed a sufficiently good cover to permit of the pits being held during the day time. The enemy made repeated attempts during the night to retake this position, but were unsuccessful. Lieutenant Lennox received the much-coveted distinction of the Victoria Cross for his gallantry on this occasion, being the first Engineer officer to whom it was

awarded. It seems somewhat difficult to understand why Lieutenant Philips, who was equally zealous, did not receive a similar reward. Lieutenant Tryon, who commanded the assaulting party, was killed during one of the enemy's attempts to recover their pits. The French published a most complimentary order of the day on this gallant feat.

On December 2nd the 7th Company of Sappers arrived from Gallipoli, the Royal Engineer officers being: Captain E. G. Gibb, commanding, with Lieutenants W. C. Anderson and J. M. C. Drake. The Sappers numbered eighty-six, and made a most seasonable addition to the Engineer force. Almost as important as the men was the supply of about 400 gabions and a large number of sandbags. It seems incredible, but the fact is nevertheless recorded officially, that the Engineers were, during all the earlier part of the siege, altogether unprovided with revetting materials, they had even been compelled to employ stones for the revetments of their works. Indeed, the journal of the siege operations is full of complaints of the difficulties under which they suffered, and in spite of which they laboured on with a zeal and a cheerfulness which was universally recognized and admired. By this time no less than seven of their officers had been invalided to Scutari from sickness brought on by exposure and overwork.

A very important point about this time had to be considered, and that was the construction of a road from Balaklava to the camp. When the siege was first begun, it was considered of vital consequence to throw up the breaching batteries with the least possible delay. It was supposed that a brief bombardment, followed by an assault, would terminate the operations. At this time the road of communication between the base and the front, although a mere track, was hard and sound. It answered every purpose; the artillery and stores were brought up without difficulty. This traffic, however, had to a certain extent cut up the surface, and when the rains set in, culminating with the great storm of November 14th, what had been hitherto a fairly good road promptly degenerated into a quagmire. It was now, therefore, when it began to dawn on all that the army was destined to winter in the Crimea, that it also became apparent their line of communication was destroyed. The order went forth that "the road to the front must be repaired."

As a preliminary to this necessary operation, orders were sent down to Constantinople to purchase a number of hammers for the breaking of stones, there being none in store. This was a good type of the difficulties encountered in even preparing to carry out the order comprised in these few words. What the actual work was which it was expected the slender force of overworked

Engineers was to execute is well shown in the following extract from a note in the Official Journal—

"The distance from Balaklava to the camps by way of the Col de Balaklava was about nine miles, or, in other words, it was equal in extent to the road proceeding from Hammersmith Bridge, on the Thames, through Brompton, Piccadilly, and the Strand, down Fleet-street, Cheapside, along Cornhill, the Commercial Road, and right away to the West India Docks. In extent equal to that, the road from Balaklava was quite unformed without a particle of metalling. The traffic, although less than in the City, was fully equal to that along Piccadilly, and to form and macadamize such an extent of road the working party consisted at first of 400 and subsequently of only 150 sickly Turks, some of them too weak even to dig, and none working more than four hours a day. The road, moreover, passed through a rich alluvial soil, and no stones could be procured within a less distance than from half to one mile. To transport these by any other than manual labour was impossible, as the amount of transport was insufficient even to supply the troops with provisions."

Such a description tells its own tale. The repair, or, as it should have been called, the construction of the road was an impossibility, and the want of a decently practicable line of communication along those terrible nine miles was a potent factor in the creation of that scene of misery which the camps presented for the next three months. The evil was patent, and steps were taken to remedy it at the earliest practicable moment. A tramroad was ordered to be sent out from England, and a corps of navvies was provided by Messrs. Peto and Brassey for its construction. This work could not, however, be begun for some time, and it was not until the month of March in the following year that it was sufficiently advanced to be of any appreciable value.

On December 20th the 2nd Company of Sappers landed from England 110 strong, under the command of Captain F. W. King, with Lieutenants G. St. J. Crofton, E. M. Grain, and J. G. Lowry. On December 25th Captain the Hon. H. F. Keane and Lieutenant C. G. Gordon also joined. It may here be recorded that the following officers had been appointed as Assistant Engineers between the months of October and December—they are given in the order in which they joined for Engineer duties: Major Cameron, Scots Fusilier Guards, Captain Chapman, 20th Regiment, Captain Baines, 95th Regiment, Captain Biddulph, R.A., Captain Vacher, 33rd Regiment, Captain Stevens, 88th Regiment, Major Hale, H.E.I.C. Artillery, Lieutenant Roberts, R.M. Artillery, and Captain Wolseley, 90th Regiment. Mr. Newsome, Civil Engineer, was also taken on for the same duty on October 25th, and remained acting until May, 1855. He was afterwards appointed to the Corps of Royal Engineers.

CHAPTER XIX.

The Russian War, continued—1855.

Description of the British Attacks at the beginning of 1855—Difference of Opinion between Burgoyne and Bizot as to an Attack on the Malakoff—Appeal to the Emperor at Paris—Niel sent to Report on the Position—Scarcity of Fuel and its Results—Lieutenant Drake's Gallantry—Commencement of the Railway—General H. Jones ordered to Relieve Sir J. Burgoyne—Revised Scheme of Attack—Advance of the Russians on the Careening Bay Ravine, the Mamelon, and the Dockyard Creek—Description of the Works of Attack in April—The Electric Telegraph—The April Bombardment—Capture of Rifle Pits—Arrival of the Sardinian Army—Capture of The Quarries, Mamelon, and *Ouvrages Blancs*—Unsuccessful Assault on the Redan and Malakoff—Lieutenant Donnelly and the Cemetery—Death of Lord Raglan—The September Bombardment and General Assault—Retreat of the Russians to the North Side—Occupation of the South Side by the Allies—Engineer Promotions—Destruction of the Docks and White Barracks—Colonel Lake at Kars.

It will be well to commence this Chapter with a description of the British attacks as they stood at the beginning of 1855. On the right, running along the crest of Frenchman's Hill, was the series of batteries called Gordon's, or the 21-gun battery. These were numbered from right to left as 1, 2, 3, 4, 5, 6, &c. Nos. 2 and 6 were for mortars, the other four for guns. A communication to the rear, across the plateau of the hill, gave cover until the reverse slope was reached. The parallel was extended to the left, beyond the batteries, as far as the crest of the ravine separating the two attacks, in which ran the Woronzoff road. About 600 yards in front of the first parallel ran the advanced line. At a subsequent period an intermediate line was formed which was called the second parallel, and then this advanced trench became the third parallel. It stretched across the brow of the advanced slope of the hill and was about 600 yards long. In it was No. 8 mortar battery; like the first it terminated on the left at the crest of the ravine. There were two lines of approach between the parallels, one on the right and the other towards the left. About half way to the front in the left approach was a mortar battery called No. 7. This communication having been traced more or less in a direct line was strongly traversed in the front portion, which would otherwise have been enfiladed from the works near the Redan. Magazines

had been established in several caves that existed in the rugged side of the Woronzoff ravine.

In the left attack the first parallel ran from the crest of the Picket House ravine on its left to that of the Woronzoff ravine on its right. Here it descended the slope, and extended to the road at a point which brought it into an alignment with the first parallel of the right attack. It ran along the rear of the Green Hill, which was its highest part. In this line were established five gun and two mortar batteries, the former for 42 guns and the latter for 8 mortars.

The second parallel ran about 600 yards in front, extending like the first from the crest of the Picket House ravine across to the Woronzoff ravine, where it also descended and crossed the road nearly in an alignment with the third parallel of the right attack. The ordinary communication between the first and second parallels was across the open, but a sheltered road had been formed on the left below the crest of the ravine, which could be used when it was not considered prudent to cross the open ground. At a late period of the siege a regular line of approach was constructed between the two lines. About 250 yards in front of the second parallel ran a trench on the site of the Russian rifle-pits, captured by Lieutenant Tryon on November 20th. This was 150 yards long, and communicated with the parallel by boyeaux. A third parallel ran about 100 yards in front of this trench, taking the form of the crest of the slope of the front portion of the Green Hill, which jutted out thus far, forming a long narrow table-land. This was also connected by boyeaux, and was the most advanced point in either attack, being about 700 yards from both the Barrack battery and the Redan, and about 800 from the Creek battery. No guns had as yet been established on the left attack, in front of those in the first parallel. Magazines were formed in caves on the precipitous side of the Picket House ravine. On the left of that ravine a gun and mortar battery, quite detached from the rest of the attack, had been established.

Such were the works that had up to this time been constructed, and which now awaited reinforcements of men and material for further development. The French attack was on the left of the British, and had been pushed steadily onwards towards the Quarantine, Central, and Flagstaff Bastions.

In addition to the works of attack, defensive lines had been thrown up both at Inkermann and Balaklava. The former ran along the crest of the heights, supported by redoubts, the latter enclosed the position occupied by the British on the east and north. The labour involved in these defensive works had greatly impeded the advance of the attack.

Up to this time the freedom from casualties of the officers of Royal Engineers and the Assistant Engineers had been very marked. Three had been killed since the ground was first broken, and the only wounded were Lieutenant C. N. Martin, R.E., who received a severe injury in the groin in the advanced trench of the left attack on November 24th,* and Captains Baines and Cameron, Assistant Engineers, who had both been slightly wounded in October. Lieut.-Colonel Alexander had died of apoplexy, and Captain W. M. Inglis had been drowned in *The Prince* on the occasion of the hurricane of November 14th; Lieutenants Ravenhill, Creyke and Lempriere had been invalided to England.

Until after the battle of Inkermann, the Russians had so far occupied the ground on the right that it was not possible to extend the attack to embrace the Malakoff Tower. When after their defeat on November 5th they abandoned that ground, Sir John Burgoyne at once urged the advisability of its being occupied by the British, and that they should push forward to their right as far as possible. In a memorandum, dated November 20th, 1854, after sketching out what the position then was and what had been the action up to that time, he concludes—

"Two points are strongly recommended for attention:

"1st. To press forward as early and energetically as possible along the right till absolutely to overlook and command the Careening Bay, and in some degree the Tower" (Malakoff) "and works about it, to which also advances should be made, by which it may be hoped that the valley that communicates with that bay, then in our possession, will be found to give cover to our troops to within no great distance of the enemy's lines.

"2nd. The operations having become in a degree suspended, not to recommence by dribblets, which afford means of counteracting their effects, but to collect and repair as great a power as possible, and reopen with the most impressive and effective accumulation of means at once, with a view of producing striking and rapid results."

In furtherance of this object he put forward another memorandum on November 23rd, in which he pointed out that when the attack was resumed, the efforts of the British should be rather against the Malakoff than the Redan, and that the possession of the ridge along the harbour gave facilities for that purpose. With this view, additional batteries should be established to the right, and in front of the Tower, with as much cover as possible for troops when pre-

* Sir John Burgoyne thus wrote of this casualty to Colonel Matson:—"Lieutenant Martin was dangerously wounded last night at our advanced trench on our left attack. He is a great loss, as he is one (among several) who have been always reported as most gallant, zealous, and energetic."

paring to assault, and that to secure these objects full possession should be obtained of the ravine leading down to the Careening Bay.

On receiving this memorandum, Lord Raglan desired Burgoyne to consult with the French Engineer, General Bizot, which he did, and found that officer diametrically opposed to his views, and unwilling to recommend that any assistance for the purpose should be rendered by them. This opposition made it impossible to carry out the ideas he had propounded, but he renewed his proposal in a modified form by another memorandum, dated on November 26th.

It will be seen, as the narrative proceeds, that the English Engineers through their chief always maintained the necessity of attacking the Malakoff, and that it was owing to the reluctance of the French to render them any assistance that the advance on that point was not started soon after the battle of Inkermann. When the siege began, the two armies were not very unequal in strength, and the attacks, that of the French on the left, and of the British on the right, embraced somewhat the same extent. It was now contended that any extension on the right was purely the duty of the British, although this threw on them a great preponderance of work. Meanwhile, their strength had been daily diminishing, whilst that of the French had so much augmented that they were at the time more than twice as numerous as their allies. The British troops were called upon to undertake a physical impossibility, and so the scheme was for the time held in abeyance. There can be no doubt that the real reason of the French reluctance to assist arose from the fact that they had not as yet realized the truth, so plainly seen by Burgoyne, that the Malakoff was the key of the position, and that it was at that point that the decisive blow should be given.

The first step on the part of the French to assist their overworked and enfeebled allies took place on January 21st, when Bosquet's division was sent to take up its position on the Inkermann ridge. This relieved the Light and Second Divisions of the British force from the guard of the extreme right flank, and enabled them to concentrate their strength for the defence of their trenches and batteries.

Before, however, this had been done, the dispute as to the advisability of advancing on the Malakoff was rapidly assuming an acute stage. The French reasons for opposing the scheme were that it would create great delay, and that it would leave their trenches and batteries on the left exposed to insult by heavy sorties. They wished the main assault to be delivered in their front, whilst the British were to make a diversion by a subsidiary

attack on the Redan and Barrack batteries. This the British Engineers, led by Burgoyne, thought certain to prove a failure, and Lord Raglan supported that view. The upshot was that General Bizot addressed to General Canrobert a formal letter of complaint as to what he considered the obstructiveness of General Burgoyne. Canrobert forwarded a copy of it to the Emperor at Paris at the same time that he sent the original to Lord Raglan. The result of the appeal was that the Emperor sent General Niel, of the French Engineers, to give his opinion on the subject.

During the early part of January severe frost set in, and gradually improved the roads of communication by hardening them. Before the middle of the month, however, heavy falls of snow once more impeded transport operations. It lay upwards of a foot deep on the plain, and where it had drifted it was in many places very dangerous. Fuel had at this time become extremely scarce. Everything available for firewood had been burnt, and the men were for some time driven to great stress to find enough even for cooking. The result of this want was highly detrimental to the Engineers and their work. The soldiers brought down with them into the trenches their coffee (which from some unaccountable carelessness had been sent out unroasted) and other articles that required cooking. They then proceeded to raise material for a fire by pillaging the brushwood from the gabions and fascines, as well as anything else in the way of fuel that they could lay their hands on. The helves of the picks and the handles of the shovels disappeared in a most unaccountable manner, and the utmost difficulty was experienced in preventing the entire destruction of the revetments and the wholesale spoliation of stores.*

On January 9th, Lieutenant Leahy, R.E., was made Quartermaster to the Sapper force; he was afterwards promoted to be Deputy Assistant Quartermaster-General for the same duties. This nomination was a great boon to the men, who had up till then suffered sadly from the want of any specially authorized officer to look after their necessities. It was simply impossible for the Company officers, overworked as they were in the trenches, to perform these additional duties.

Sir John Burgoyne records in his letter an incident connected with Lieutenant Mervin Drake, R.E., which unfortunately does

* "There have been great complaints of the troops in the trenches during severe weather burning gabions, fascines, platforms, and even handles of tools for firing. Sir Richard England was stating to Lord Raglan yesterday the necessity for the troops having a quantity of pickaxes to dig up roots of brushwood for fuel, and added, 'In fact, my lord, pickaxes are fuel;' to which my lord answered, 'Yes, so they report to me from the trenches.'"—(Letter of Sir John Burgoyne, February 8th, 1855.)

not appear in the official journals, probably from its having taken place just at the time when the compilation was transferred from Captain Elphinstone to Sir H. Jones. The entry is as follows:—

"Lieut. Drake, R.E., has just performed a very spirited service. Looking forward, as I cannot refrain from doing, to the Allies taking the initiative against the enemy in the field, I requested Major Gordon to get the means of passing the Tchernaya reconnoitred, and he sent Lieut. Drake a few nights ago with a corporal of Sappers to examine the river by the broken bridge on the causeway under Inkermann. It is a point that our people seldom approach, not knowing how far the enemy advance towards it at night from the posts they have on the other side of the valley. Mr. Drake had a little raft made of four small casks to pass the river, which in its present state is between 60 and 70 feet wide, 10 feet deep, very steep banks, muddy bottom, and very rapid. He took his section across the river and examined the causeway for 180 yards beyond, when he found a cut of which we were not aware. In the meantime one of his casks let in the water, and in returning the raft upset. He is an excellent swimmer and could have got out at once with ease, but he saved the Sapper also, who could not swim, before he came out, and then cold and wet (in a sharp frost) he collected, and brought back all the materials, so as to leave no indications on the ground, the whole shewing a great deal of spirit and persevering energy. I have written him a letter expressive of Lord Raglan's satisfaction with his conduct, which he may keep as a testimonial."

During the month of January the railway staff arrived with their men and stores, and a line was commenced, which was gradually led on to the plateau and proved of the greatest possible use. Much difficulty, however, soon arose both as to the payment and the position of the civilians employed at this work. An idea had arisen in England that these men might with advantage be employed under fire in the construction of trenches and batteries, and might even on occasion assist in the more deadly work of the assault. Sir John Burgoyne, to test the question, wrote a letter to Mr. Beattie, the principal Engineer of the Railway department, to ask him whether he thought well of inviting such of the men under his orders as might feel disposed to enrol themselves, and be slightly exercised so that they might be employed in the defence of positions, near which they might happen to be. The answer proved in the clearest manner that the popular notion was a delusion. It was as follows:—

"The subject of your letter was very fully and anxiously discussed in London before I left, and it was determined *not* to arm the men. They were considered too valuable to be employed as soldiers, and were distinctly told that they would not be called upon to fight. I have discussed the matter with my two principal assistants, Mr. Campbell and Mr. Kellock, and these difficulties present themselves: Asking the men to

volunteer will be tantamount to a breach of faith with them, as, however open we may leave it to themselves to act, it will be looked upon in the light of compulsion. The half, who are not disposed to join will be driven to do so by the insinuations and jeers of the other half who are. We fear that by attempting to make, as it were, a fighting corps of these men they may be disorganized altogether as useful workmen. These difficulties present themselves to us, but any suggestion from you that will enable us to get over them will receive our very best consideration. That a great portion of the men would be willing enough to form themselves into a corps I believe, and the officers also."

This reply naturally settled the question, but Sir John was sufficiently acute to put the saddle on the right horse. In his reply, which is too long to quote, he says—

"I hope it will not be thrown in our teeth among the other crimes that are so liberally imputed to the military authorities here, that they neglected to avail themselves of the services of those men against the enemy, when I see strongly advocated the employing the navvies *in the trenches*, and even that they would be proper men to *lead in an assault* —actions that I never contemplated for them."

It has been said that General Canrobert forwarded General Bizot's complaint against the British Engineers to Paris, and that in consequence the Emperor sent his A.D.C., General Niel, to investigate and report on the matter. As soon as the British Government were made aware of this step they decided upon recalling Sir John Burgoyne, without waiting for the report which General Niel was to furnish. Major-General H. D. Jones, R.E., had already been ordered to proceed to Constantinople, to take up the position of Commanding Royal Engineer there. He was now directed to join in the Crimea, to assume similar functions at Head-quarters, whilst Lord Raglan was instructed to order Sir J. Burgoyne to return home to resume his position at the War Office as Inspector-General of Fortifications.

On February 10th, 1855, the following General Order was issued by Lord Raglan :—

"No. 1.—The undermentioned officers have joined the staff of this army :—Major-General H. D. Jones, Royal Engineers ; Lieut. J. Cowell, R.E., A.D.C., Lieut. R. Jameson, 2nd Life Guards, A.D.C. ; 8th Feby., Major-General Jones will take the duties of the command of the Royal Engineer department. Lord Raglan desires to convey to Major Gordon, who has held the command of the department since the 20th October last, the perfect satisfaction he has entertained at the manner in which he has performed that as well as every other duty since he joined the army."

On the arrival of Niel a council of war was held, consisting of Burgoyne, Bizot, and himself, which was followed by a second

on February 1st. The result of these deliberations was that Niel agreed with Burgoyne rather than with Bizot, and it was decided that the Malakoff should be included in the scheme of attack. A memorandum was drawn up by Bizot, embodying the results of the decision, of which the following are the main heads:—It commenced by stating that in accordance with the opinion of Burgoyne works of approach should be made before the Malakoff Tower, so as to attack this point simultaneously with the assault on the western side. The reasons for this are stated to be, that columns of assault could at that point advance in good order; whilst on the western side the approach was intersected by ravines and broken ground. With this view two new batteries were to be thrown up, one for eight guns in the British right attack, the other for fifteen guns on the high ground to the east of the Careening Bay ravine. The fire of these batteries was to be directed on the Malakoff Tower, and on the high ground in front (the Mamelon). As soon as these were completed and armed, all the batteries (French and English) were to open fire. Under cover of this a parallel was to be established on the Mamelon, and works of approach pushed forward from that point, as well as in front of the Redan, so as to be able to deliver the assault without having to traverse too much open ground. Should the effect of the bombardment not be sufficiently marked to warrant an assault, then the attack on the Malakoff could be still further developed. The remainder of the note explained the assistance to be rendered on each side to carry out the new work.

In accordance with this agreement, on February 15th a body of 200 Zouaves, under the direction of a French Captain of Engineers, were set to work to throw up the eight-gun battery, which was traced about eighty yards in rear of the advanced parallel of the British right attack. On this occasion, the report says, the cover obtained was very good, and the order, silence and regularity with which the work was conducted under the superintendence of a captain of the French Engineers, was remarkable. There is no question that here, as in the Peninsular war, the difference in the *working* qualifications of the two armies was most decided. On this point Sir John Burgoyne wrote to Colonel Matson, stating what the arrangements for French assistance were, viz., that they were to find working and covering parties, whilst the British provided guns, ammunition, artillerymen, Engineer officers, Sappers, stores, and materials.

"In compliance with these conditions they have exacted from us 150,000 sandbags, 750 gabions, all the necessary platforms, and even tape, cord, and every trifling article that could possibly be required. We have been determined to comply as far as we could, and have furnished almost

everything they have asked for, although it nearly beggared us in some matters."

On the night of February 22nd the Russians made the first of that series of advanced movements which were the cause of so much subsequent delay and annoyance. They commenced the construction of a work on the height to the right of the Careening Bay ravine, which, when completed, was known as the Selinghinsk Redoubt. This was considered so objectionable that on the following night the French assaulted it, but without success. The Russians held their ground, completed the work, enclosed it, and made a communication to it from the head of the creek. A few nights later on, February 28th, they advanced still farther, and then threw up another called the Volhynian Redoubt.

The result of this Russian success was a complete check to the advance of the besiegers. The position now held threw the Malakoff into a re-entering angle, and any attempt to assault or to sap up to it was impracticable, so long as the high ground on the east of the Careening Bay was occupied by Russian works. A new council was held between the four Engineer Generals, at which Bizot put forward a proposition that the attack on the Malakoff should be abandoned, or rather restricted to the occupation of the Mamelon Hill in its front; that when that point was secured the British trenches in front of the Redan should be pushed forward sufficiently near to enable an assault to be delivered simultaneously with a French assault on the Flagstaff Bastion, and that the allies should endeavour to establish themselves on those two points, and then, to use Bizot's words, "to advance foot by foot on the interior intrenchments which exist there, unless unforeseen facilities present themselves, of which immediate advantage will be taken."

To this Sir John opposed the proposal that the new Russian redoubts should be stormed and taken—

"I should hold it expedient to drive him from that post by whatever may be conceived the best means before attempting any assault or lodgment on his lines or the Redan; that is I still think that we should adhere to the project of the French note of February 2nd, which would entail the necessity of dislodging him from that advanced position."

In consequence of this divergence of views a Conference was held on March 6th at the British head-quarters, at which were present Lord Raglan, Sir John Burgoyne, Sir George Brown, and General H. D. Jones on the part of the British, and Generals Canrobert, Bosquet, Niel and Bizot on that of the French. At this Conference General Jones gave his opinion so far in favour of the French view "as to think less of the difficulties of succeeding

against the Redan, even with the Malakoff Tower attack abandoned, than were anticipated by Sir John Burgoyne."*

Under these circumstances Bizot's views carried the day, and the attack was ordered to be continued more or less in consonance with his design. A few days, however, proved that Sir John was right. The Russians, finding themselves secure and unmolested at the point to which they had advanced, determined to continue the game of counter approach, and on March 10th carried out a precisely similar operation on the Mamelon. The report of the look-out station on the following morning stated—

"The Russians have been at work during the night on the Mamelon, the nature of the work cannot as yet be ascertained."

whilst Lieutenant-Colonel Tylden, in charge of the right attack says—

"The enemy are reported to have been working on the Mamelon in front of town (q^{r} tower). Captain Craigie, however, states that he cannot distinguish the character of the work. In the course of the morning, when the weather clears, he shall be able to see."

On the 11th Captain Staunton reported, "I could hear the enemy at work on the Mamelon in the early part of the night." A fire of shells had been kept up on the working party from the mortar battery at Frenchman's Hill. It was now quite clear that the Russians meant to hold the point, and a heavy fire was concentrated from all sides on the Hill. In spite of this, and by dint of considerable sacrifice of men, the garrison succeeded in constructing a powerful work with heavy batteries on the three faces that bore on the attack, in front of which they excavated trenches, rifle-pits, and screens running down to the front of the hill to within 100 yards of the French parallel. This was a complete checkmate to the advance of the British right attack, as the ground they would have taken up was swept by its fire, and any trenches would have been enfiladed.

This was not the only movement in advance made by the Russians at this time. There had hitherto been a break between their town line and the Barrack battery. This was the low ground at the head of the Dockyard Creek. Now they erected a powerful battery, eventually developed for twenty-three guns, right across the head of the Creek—which swept both the Woronzoff and Picket House ravines, and bore on the hill on which the left attack of the British was advancing. In front of our right attack also

* Notes of a Conference held on the evening of March 6th, at the British head-quarters, to take into consideration the future proceedings against Sebastopol.

they established their advanced pits, and occupied a series of quarries on the spur in front of the Redan, with trenches and rifle-pits in advance. It seemed, therefore, at this time as though the allies were about to be besieged in their own trenches.

On March 21st Sir John Burgoyne, then about to leave the army, issued the following Corps' Order—

"The Inspector-General of Fortifications cannot quit this army without expressing his strong testimony to the exemplary manner in which the officers of Royal Engineers and non-commissioned officers and privates of the Royal Sappers and Miners have performed under his own eye their arduous duties before Sebastopol. The Inspector-General of Fortifications is not aware of any siege that has been carried on under more trying and difficult circumstances, and he has had great pleasure in repeatedly pointing out to the Commander-in-Chief how gallantly and creditably every operation by the Engineer department has been conducted. In now taking leave of his comrades of all ranks, he thinks that he cannot wish them better fortune than that finally in this enterprise they may meet with the success that as far as depends on them is so well merited."

On the night of March 22nd a heavy sortie was made by the Russians on the French and English right attacks. In this affair Major J. W. Gordon, R.E., was severely wounded. This officer had repeatedly exhibited the most conspicuous gallantry and coolness under fire, and had been a noble example not only to his own Corps but to all who were thrown in contact with him. Dr. Russell thus describes the incident—

"In the midst of the fight Major Gordon, of the Royal Engineers, displayed that courage and presence of mind which never forsook him. With a little switch in his hand he encouraged the men to defend the trenches, and standing up on the top of the parapet, unarmed as he was, hurled down stones upon the Russians. He was struck by a ball which passed through the lower part of his arm, and at the same time received a bullet through the shoulder."

Captain Montagu, R.E., was at the same time made a prisoner, and carried off into the town. He was not released for four months.

The work of arming the various batteries and replenishing the magazines had now so much advanced that the question of taking decisive measures once more came to the front. On March 25th a conference was held between the French and English commanding officers of Engineers and Artillery, when it was decided that there seemed every possibility of opening a general bombardment on April 2nd. It will be well at this point to describe the changes that had taken place since the commencement of the year, both as

regards the progress of the British advance and also the *personnel* of the Engineers.

In the left attack the following new batteries had been constructed; one called No. 7 for six guns, and another No. 8 for eight guns, on the left and centre of the third parallel, respectively. The bombardment began before they were armed. No. 9 at the extreme left of the second parallel had been commenced, but was not ready for its guns. No. 14 battery for two 9-pounder guns was thrown up on the right of No. 8, and formed the termination of the third parallel as it then existed. Rifle screens were excavated in advance, and some caves to the left front connected by trench approaches, well traversed, were occupied by riflemen. These caves were known as "The Ovens."

On the right attack, No. 9 battery for eight guns had been constructed in rear of the advanced parallel, and connected right and left with the approaches, thus forming a second parallel. The third parallel had been extended to its right until it was connected with the French line in the Middle Ravine. Nos. 10 and 11 mortar batteries were built to the right of the 21-gun battery, and No. 12 in the communication to the front near No. 7. A large rifle pit had been formed to the right front of the third parallel, with boyeaux of communication thereto.

During the same interval of time the electric telegraph had been established between the base and the trenches. Although all the *matériel*, including wires and instruments, had arrived at Balaklava early in December, 1854, it was not until February, when the snow had begun to diminish, that it was possible to take measures for the adoption of the system. Lieutenant Stopford, R.E., was placed in general charge of the telegraphs, with a detachment of Sappers to work the instruments. On February 27th the first line was commenced between Lord Raglan's head-quarters and Kadikoi, where the depôt was established for the railway. The distance was about three miles, and the line was opened on March 7th. It was then continued one mile and a half farther back into Balaklava. The next step was to carry it from head-quarters to the Engineer park in the left attack, and afterwards to the picket-house in the Woronzoff Road, and on to the caves in the right attack. This portion, four miles and a half in length, was completed by April 8th. Subsequently other lines were laid from head-quarters—one to the monastery of St. George and another to Kamiesh Bay. In all twenty-one miles of wire were eventually laid down, and eight stations opened. The mode of proceeding in laying the wires was to cut a trench eighteen inches deep, in which the wire was bedded. The intention, when the apparatus was sent from England, had been to lay the line with a plough. The wire on its drum was to

BATTERSEA PUBLIC

be attached, and the end of it passed through the share of the plough, which was hollow for the purpose. As the plough advanced and the drum revolved, the wire passing off it and through the share would be deposited at the bottom of the furrow, which was so narrow, owing to the form of the ploughshare, that it filled itself up again, and the wire was buried automatically. On trial, however, it was found that the plough was not heavy enough to make the slightest impression on the ground. Only two instructed Sappers had been sent with the instruments, and one of these had to be sent to his duties in the trenches, leaving Corporal Fraser alone to instruct the men who were to be employed. In his report on this subject Lieutenant Stopford says :—

"They (the Sappers) showed great quickness in learning the use of the instrument, although not one of the men . . . . had any knowledge of or, indeed, seen the single needle instrument before."

During the period from the beginning of the year to the opening of the April bombardment, the following officers Royal Engineers, and Companies Royal Sappers and Miners had joined the army :—Captain J. F. M. Browne, Lieutenant Carter, and the 1st Company Royal Sappers and Miners in the beginning of February ; Captains H. C. C. Owen and F. C. Belson in the middle of that month ; Captains J. A. Armit, W. Porter, and Lieutenant E. R. Jones at the end of the month ; and Lieutenant E. Bainbridge in the middle of March. The losses during the period had been Lieutenant-General Sir John Burgoyne, returned to England ; Captain Craigie, Lieutenants Bainbridge and Carter, killed ; Major J. W. Gordon and Lieutenant Martin, wounded ; Captains Gibb and Grain, and Lieutenants G. Philips and Stokes, invalided home, and Captain Montagu taken prisoner.

Every arrangement was made on April 8th to open the bombardment on the following morning. In the afternoon the officer commanding the Artillery asked for a postponement of forty-eight hours, as Nos. 7 and 8 batteries in the left attack, and Nos. 9, 11, and 12 in the right attack were not ready. This, however, was refused, the matter having been already definitely settled with the French. The result was that although the bombardment opened at daybreak on the 9th, No. 7 battery only joined in the fire on the 13th, and No. 8 on the 14th. In the right attack No. 9 opened on the 12th, but Nos. 11 and 12 were not completed in time to take any part.

In the course of the day on the 8th the weather, which had till then been fine, broke up and became tempestuous, accompanied by torrents of rain which continued throughout the night. At 5

a.m. on the 9th all the batteries that were ready opened their fire and continued steadily at work throughout the day. At night, when the guns ceased playing, the mortars were brought into action and kept up a constant stream of shell fire upon all the principal Russian batteries. At daybreak on the following morning the guns resumed work, and thus for several days and nights the bombardment progressed with unabated vigour. During this time the labours of the Engineers, officers and men, were unceasing. At night all the injuries caused by the Russian artillery, as also by our own, had to be restored, whilst embrasures had to be repaired under fire whenever damaged. General Jones reported—

"The Officers of Engineers and Sappers exerted themselves most gallantly and zealously in repairing damages to the batteries."

Whilst Dr. Russell, in his history of the siege, says—

"It was impossible to deny to the Russian Engineers great credit for the coolness with which they set about repairing damages under fire, but words could not do more than justice to the exertions of our own men, and to the Engineer Officers and Sappers engaged in this most perilous duty. When an embrasure was struck and injured it was the duty of the Sappers to get up into the vacant place and repair the damage, removing the gabions, &c., under fire, and without the least cover from shot, shell, or riflemen. Our Engineer Officers had frequently to set the example to their men in exposing themselves when not called upon to do so."

On April 14th a conference of French and British Artillery and Engineer Generals was held in General Jones's hut, at which six French and two British were present, the result of which was a decision that the bombardment should be continued, and that the French approaches should be sufficiently advanced to enable them to assault without much previous exposure. This, it was thought, would be done in three days. The town was then to be attacked. Three French columns were to advance on the left and a fourth on the Mamelon, whilst the British were to assault the Redan, the fire being kept up vigorously till the last moment.

On the night of April 19th two large rifle-pits which had been constructed by the Russians, well in front of their post at the Quarries, and which, owing to the advance of our trenches on the left of our right attack, had become perilously close, were assaulted. For the purpose of this attack 600 men of the 77th Regiment under Colonel Egerton were brought into the trenches, and Lieutenant-Colonel Tylden, R.E., in charge of the right attack, explained the proposed course of proceeding. At 9.30 p.m. the dash was made, the enemy driven out after a sharp resistance, and the working party brought forward to make the necessary lodg-

ment. This consisted of 150 men, who were in charge of Captain Owen, R.E., and Lieutenant Baynes, R.E., with a brigade of Sappers. The nearest rifle-pit was promptly reversed, so as to give cover from the Quarries, and connected on its left with our advanced boyeau, whilst on the right it was prolonged to form a more extended lodgment. The enemy returned repeatedly to the attack during the night, and a very heavy fire was kept up on the working party. The British were, however, not to be dislodged, and the pit from that moment became part of our advanced attack. Unfortunately, this success was not secured without heavy loss, Colonel Egerton, who led the assault, was killed, and both of the Engineers, Owen and Baynes, wounded; the latter mortally; Captain Owen had his leg shattered by a grape shot, necessitating amputation. In making his report of the operation, Lieutenant-Colonel Tylden stated that, owing to the loss of these two officers, he was only left with Serjeant M'Donald of the Sappers to aid him in the direction of the work, and that the gallant and steady conduct of that non-commissioned officer, who was himself wounded, attracted the notice of Colonel Egerton. In addition to Serjeant M'Donald, one non-commissioned officer of Sappers was killed and one wounded severely. In memory of Colonel Egerton, these pits were always afterwards known as "Egerton's pits."

General Jones in his report stated:—

"Lieut.-Col. Tylden, R.E., the director of the right attack, particularly distinguished himself by his zeal, gallantry, and the good arrangements he made for the attack and the lodgment."

And he further issued the following Brigade Order:—

"It is with much satisfaction that the Major-General Commanding received Lieut.-Col. Tylden's report of the able manner in which, on the night of the 19th inst., a lodgment was effected in the enemy's rifle pit immediately in front of the left advance right attack under Capt. Owen and Lieut. Baynes, R.E, whose zeal and gallantry were most conspicuous, while the conduct of Colour-Serjeant M'Donald, R. S. & M., on the same occasion, when, in consequence of the officers above named being seriously wounded, he was left in charge of the working party, was not only highly creditable to that N.C. Offr., but so distinguished as to attract the notice of the field officer commanding in the trenches; and the Major-General is glad to find the Sappers engaged exerted themselves with their accustomed energy."

This dashing affair was the only practical result of the April bombardment. By the time that the magazines and shot piles were approaching exhaustion, it became clear that no decided predominance had been obtained over the enemy's artillery. The besiegers' fire steadily though gradually slackened, and before the

end of the month had ceased. No further idea of assault was entertained, and both antagonists braced themselves up for new efforts. On the side of the British fresh batteries were thrown up and the advanced trenches were pushed slowly forward. All the damages caused by the enemy's fire were repaired, and the defects which had become apparent during the bombardment obviated.

On April 28th, Captain Bourchier, R.E., was appointed Brigade-Major to the force of Sappers. Lieutenant Lennox had been made Adjutant at the end of January, and this appointment was confirmed by the Board of Ordnance on April 28th.

On May 8th General Della Marmora, with the first portion of the Sardinian army, mustering 5,000 men, landed and joined the besieging army. Before the end of the month the whole force of 15,000 men had arrived. On May 19th General Pelissier superseded General Canrobert in command of the French army, and this change seems at once to have infused more activity into their attacks. The new General was prompt to join in every measure calculated to expedite matters, and was not as timid as his predecessor had been in launching his men at the enemy's works.

On May 28th a meeting was held in Pelissier's hut, at which the Generals of the French were present, three of whom were Engineers. On the part of the British, General Jones, R.E., and Colonel Adye, R.A., took part in the proceedings. At this meeting General Pelissier announced his intention of promptly assaulting the Mamelon and the redoubts in front of the Inkermann attack, known as the "Ouvrages Blancs," and requesting that the British should at the same time establish themselves in the Quarries in front of the right attack. General Jones promised to lodge a force in the Quarries and clear the ground in front at the same time that the French crowned the Mamelon. A good deal of discussion took place for the next few days, at the end of which it was decided that fire should be opened from all the batteries for two days, and that on the evening of the second day the forward movement should take place on all three points simultaneously by signal.

By this time the following additions had been made in the British attacks. On the left, No. 10 battery for seven guns in the centre of the second parallel; No. 11 for eight guns on the extreme left of the same parallel, beyond No. 9, with a communication from it under shelter of the crest of the ravine; No. 12 for four mortars to the right of No. 9, and No. 13 for four mortars in the third parallel, between Nos. 7 and 8. In the right attack three new batteries had been thrown up, No. 13, or the Sandbag Battery, for four guns in the second parallel, to the immediate right of No. 12; No. 14, for five guns, in the same parallel, to

the left of No. 9; and No. 15, for three mortars, in a small quarry to the left of No. 12.

During the interval, since the April bombardment, the following Royal Engineer officers had joined the besieging force:—Captains Jesse, De Moleyns, Dawson; Lieutenants Fisher Somerville, Scott, and Darrah. The 9th Company Royal Sappers and Miners had also been added to the strength. On the other hand, the following losses had been sustained:—Captains King, Crofton; Lieutenants Baynes and Carter killed; Captain Owen wounded, and Captain Porter and Lieutenant Pratt invalided.

It may here be mentioned that during the month of May a very successful expedition was made to Kertch and Yenikale, where the Russians had accumulated vast masses of stores of every description. These were all destroyed, and after a few days spent carrying devastation in every direction, the force returned to its siege duties. Lieutenant-Colonel J. W. Gordon, Captain Hassard, and Lieutenant Drake, were the Royal Engineer officers employed on this service. Captain Hassard commanded the 11th Company of Royal Sappers and Miners, which formed part of the troops employed, whilst Lieutenant-Colonel Gordon held the post of Commanding Royal Engineer.

On June 6th all the batteries opened at 3 p.m., and before sunset had done good service, the enemy's works being greatly knocked about. During the night the mortars were kept playing upon all the quarters where the enemy were likely to be engaged in restorations, and on the 7th the artillery fire recommenced at daybreak. At 6 p.m. that evening the signal was given, and three simultaneous assaults delivered. One French column was directed against the "Ouvrages Blancs," a second against the Mamelon, and a British column against the Quarries. All three were perfectly successful. The Russians were driven out, and the first steps taken to connect these works with the besiegers' advanced trenches.

As regards the British attack, the troops were commanded by Colonel Shirley of the 88th, acting as a General officer. He was assisted by Lieutenant-Colonel Tylden, R.E., who guided him as to the points of attack and the distribution of the troops in the assault. The Royal Engineer officers employed in this brilliant operation under Lieutenant-Colonel Tylden were Captain Browne and Lieutenant Elphinstone in charge of the working parties, and Lieutenant Lowry as guide to the attacking column. Captain Wolseley and Lieutenant Anderson, Assistant Engineers, also served with the working parties. Lieutenant-Colonel Tylden made the following report on the operations:—

"The enemy's 'ambuscade,' known as the Quarries, and the adjoining

trenches in front of the left of the right attack, were stormed and carried yesterday evening about 7 p.m., by a party of 400 men from the Light and Second divisions. A good lodgment has been formed on our right of the Quarries, and the communication thereto from the left advanced sap has been made good. Our troops are at present in occupation of the Quarry lodgment, covering their left, extending from thence to the right along the reverse of the enemy's trench to his salient rifle pit at the centre. The whole of these works of the enemy have been appropriated for our own use. The enemy's resistance was energetic and determined, evinced, not only in the defence of his Quarries, but in the repeated efforts he made during the night to retake his trenches by turning their right, as well as by direct attacks. A reserve of 600 men formed the immediate support of the assaulting party, and a working party of 800 men detailed for the forming of the lodgment communications, &c., were divided into four different parties, each for a special part of the work. Three of these parties I brought forward in readiness to commence work directly the enemy's trenches were taken, but such was the vigour of the enemy's resistance and his numbers, that the assaulting party and their reserve were insufficient to hold the captured trenches, and I quite concurred in the necessity of those portions of the working party who were armed being appropriated for this purpose. The last portion, 250 men, I kept in reserve in the right ravine communication, notwithstanding that their services were more than once urgently required as an armed party in front, and as soon as the advance had been reinforced and regularly posted, I brought this party forward, and with them made the lodgment and communication. The former was effected under the immediate direction of Lieut. Elphinstone, R.E., and when the darkness of the night and critical circumstances under which the lodgment had to be made are considered, I think that this officer deserves the highest praise for the creditable manner in which he executed this service. I was glad to be able to assist Col. Shirley, who commanded the troops, in posting them in the front, and in the orderly occupation by the reserve of the enemy's trenches. The execution of the arrangements, as regarded the working parties, as well as the general superintendence of the work, is due to Capt. Browne, R.E., who was the officer of Engineers in charge, and who executed these services to my perfect satisfaction. Capt. Browne speaks in high terms of the conduct of Capt. Wolseley, 90th Regiment, Assisting Engineer, who was employed in forming the communication to the lodgment. Lieut. Anderson, 96th Regiment, Assisting Engineer, who is a zealous and intelligent officer, was unfortunately hurt early in the night. We have unhappily to regret the loss of Lieut. Lowry, R.E., an officer whose gallantry and untiring zeal, added to the experience he possessed from many months' service in the siege, adds another instance to recent losses in the corps which we cannot easily replace, nor sustain without the deepest concern. Lieut. Lowry was the officer who conducted the storming party, which service he performed in the most gallant and conspicuous manner, and was subsequently killed by a casual shot."

This hardly tallies with Captain Browne's report, in which he says:—

"I have great regret in reporting to you the death of Lieut. Lowry, R.E., who was killed whilst gallantly cheering on the men after their having been repulsed."

To these reports must be added General Jones's remarks on Lieutenant-Colonel Tylden, which run as follows:—

"Lieut. Col. Tylden, of the Royal Engineers, distinguished himself particularly on this occasion, as well as on every other from the commencement of the siege, always at hand to aid in the repulse of the enemy whenever our works have been attacked."

After repeating Lieutenant-Colonel Tylden's encomiums on Captain Browne and Lieutenant Elphinstone, &c., he continues:—

"The Sappers and Miners were conspicuous, and by their gallantry and zeal obtained for themselves strong marks of approbation from his Lordship, the Field Marshal Commanding."

The next few days were spent in rendering secure the new acquisitions, and in constructing within them advanced batteries to play upon the line in their rear. Meanwhile fire was kept up more or less vigorously from most of the existing batteries. After a conference between the Artillery and Engineer chiefs of the two armies, which was held in General Jones's hut on June 10th, at which six French and two English Generals were present, plans were submitted for an assault on all points. The Generals in Chief, however, decided upon limiting the attack to the Malakoff and Redan without advancing on the line in front of the French left.

On June 16th General Jones issued his orders as to the duties of the Royal Engineers on the occasion. The Redan was to be assaulted at three points—the right, centre, and left. The columns were numbered one, two, and three. Each was to be headed by an Engineer officer, with ten Sappers supplied with tools for removing obstacles, behind them a covering party of 100 men, then some men with bags of wool, and after them the ladder party. The main column was to consist of 400 men, to be followed by a reserve of 800 men, and lastly a working party of 400 men. The three columns were to be identical in strength and organization, and captains of Engineers were to accompany the officers commanding. The following Engineers took part in the operation—Lieutenant-Colonel J. W. Gordon, attached to Lieutenant-General Sir G. Brown, who commanded the entire force.

No. 1 column—Major Bent, Lieutenants Murray, Graham, and C. G. Gordon.

No. 2 column—Lieutenant-Colonel Tylden, Captain De Moleyns, Lieutenants James, Donnelly, and Major Campbell, Assistant Engineer.

No. 3 column—Captain Jesse, Lieutenants Fisher, Graves, and Somerville.

There was also a 4th column, which was to move towards the Woronzoff ravine, and enter the works of the place beyond No. 3 column. To this column were attached Lieutenant-Colonel Chapman, Lieutenant Neville, and Captain Penn, R.A., Assistant Engineer; Lieutenant Elphinstone, R.E., and Captain Chapman, Assistant Engineer, were appointed orderly officers to General Jones.

The assaults failed in every direction, no column, either French or English, succeeding in establishing themselves within the enemy's works. There were two causes for this failure. First, the attack was made before the fire of the garrison had been sufficiently crushed. This was by desire of General Pelissier, who was very impatient at the losses he was sustaining in the trenches. Secondly, the French column on the extreme right, which was intended to penetrate the line to their right of the Malakoff, started before the signal was given. The Russians were, therefore, fully prepared for the other columns when they left their trenches. The result was, as has been said, complete failure, coupled with severe losses, especially of officers.

Two Engineer descriptions of the English attacks were given, one by Lieutenant Graham, who was with No. 1 column, the other by Lieutenant Fisher, who was with No. 3 column. Graham's report was as follows:—

"In obedience to brigade orders of this day's date" (the 19th June), "I have the honour to inform you that at half past three o'clock yesterday morning, I was in charge of the ladder party accompanying the storming party, ordered to attack the right flank of the Redan, Brigr. General Sir J. Campbell commanding. On the signal for the attack being given, Lieut. Murray, R.E., advanced in rear of the skirmishers towards the left, followed by the ladder party. The skirmishers did not advance beyond the rear spur of the hill, the fire from the Redan, Flanks, and Creek batteries being too heavy. Lieut. Murray was here severely wounded and obliged to retire. Lieut. Col. Tylden here came forward, and I had just obtained his sanction to advance on the salient instead of on the flank when he, too, was struck down by grape shot. The skirmishers now advanced towards the salient, followed by the Sappers, and the party carrying the woolsacks and ladders, whom I halted in front of the advanced trench, in order that the skirmishers might cover us before we advanced. Finding, however, that the skirmishers could not advance under the formidable fire of grape and musketry from the Redan, I ordered the escalading party to retire into

the advanced trench, which they did. After about ten minutes the officer in command of the storming party, Lord West, told me that he was again about to lead out the skirmishers, and requested that I would take out the ladders. This I accordingly did, and the ladders were again brought to the front. Here I beg to be allowed to remark on the remarkable steadiness and gallantry of the officers and men of the Naval Brigade, who formed part of the ladder party, and who suffered most severely on this occasion. As it was again found impracticable for the skirmishers to advance, the ladder party again retired, bringing in most of their ladders, though not without severe loss. After this no further attempt was made until the order was received for the supports to retire. I beg to call your attention to the steady conduct of the party of Sappers, under Sergeant Coppin, 4th Company, R. S. & M., especially to Private F. Perrie." . . . .

The report by Lieutenant Fisher was this—

. . . . . "On a signal being given from the 8-gun battery No. 9, I observed the skirmishers moved to the front in open order, and almost simultaneously the assaulting column advanced from the right of our (the attacking party's) position. I immediately led the Sappers to the front, followed by the remainder of the column in due order under Lieutenant Graves, R.E. I proceeded at a steady pace to allow time for the ladder party to cross the two old Russian trenches which were in our line of advance. We were exposed to a heavy fire of grape and musketry whilst advancing. On arriving at the abattis I looked back to see how the ladder party were coming on. I could not see a single ladder, the men having abandoned them or (as I believe was very general) been shot down in advancing. I observed the whole party to be very much reduced. I endeavoured to rally the men, but, being unable to get together a sufficient force to attempt an assault in the face of such fire as we were exposed to, I ordered the men to get under cover as fast as possible among the irregularities of ground and shell-holes which existed close to the abattis, in the expectation of the supports which I hoped would advance to our relief. Here they were shot down by the Russian soldiers, who stood on the parapet of the Redan to fire, as well as by the grape, which continued to sweep through our force. After waiting some time for the supports to come, in vain, I felt with such a handful of men any attempt to assault would be madness. Accordingly I endeavoured to find an officer senior to myself to recommend him to retire. Failing in this I took on myself to order a retreat into our trenches, which was effected, but I fear our loss was very great. The abattis, though not very thick nor constructed of very large boughs, was almost entirely uninjured by our fire. The largest wood was, I should think, six inches in diameter at the base, and it stood from five to six feet high above the ground. There were small gaps and weak places where men could push through. I did not attempt to pull it away with the grapnels as I considered the fire too heavy to justify me in exposing men so prominently at so short a distance from the work, our fire being insufficient to keep the Russian soldiers off the parapet from

which they were firing on us. I am of opinion that under a less severe fire it would be easy to break it up by means of axes and the iron grapnels. I am not aware that any of our men passed the abattis. I regret to state that Capt. Jesse, R.E., was shot through the head whilst in the act of speaking to me. Lieut. Graves, R.E., is missing. He is supposed to have been killed under the abattis." (Then comes a list of N.C.O.'s and privates of R. S. & M. killed and wounded.) "I must not conclude without bringing under your notice the very gallant conduct of Serjeant Landry, R. S. & M., whose steadiness in the advance and exertions in cheering on the men were most praiseworthy."

The Engineer casualties in this unfortunate business were Captain Jesse, Lieutenants Murray and Graves killed. Lieutenant-Colonel Tylden died of wounds. Major-General Jones and Captain Bourchier wounded.

The only success gained on the occasion was at the left attack, where the cemetery at the head of the Dockyard creek was captured, and a communication made from it to the advanced trenches. This, however, was only effected owing to the promptitude and zeal of Lieutenant Donnelly, R.E. General Eyre's column, after capturing the cemetery, had advanced to some houses situated at the foot of the enemy's main line of works running up to the Flagstaff Bastion, and these they occupied till night, cut off from all assistance owing to the extremely heavy fire brought upon all the intervening space. In the darkness they were withdrawn, and for some unexplained reason the cemetery itself was abandoned. Lieutenant Donnelly, when coming on duty the next morning, found to his astonishment that the point was unoccupied. He had been informed by one of his men that a Serjeant of Sappers was lying in the front either dead or grievously wounded. Although it was daylight Lieutenant Donnelly determined to go in search of the man. To his astonishment on moving out into the open he perceived that he was not being fired at from the cemetery, as he fully anticipated would have been the case. He, therefore, prosecuted his investigations, and finding the place unoccupied he returned to the trenches and obtained from the field officer in charge of the advance a volunteer party of thirty men, with whom he proceeded to the spot.

It may be well here to describe the position. The cemetery itself occupied the sloping ground which stretched from a small knoll towards our attack. In this the Russians had established an advanced rifle-pit, whilst on the knoll above they had formed a larger lodgment, covered with blindages and capable of containing a strong party of men. This knoll had always been known as the Little or Green Mamelon, and the Russian riflemen who occupied it had been a constant source of annoyance not only to the British

but also to the French left advanced lines. Lieutenant Donnelly seized upon the small rifle-pit nearest to our trenches, but found it impossible to take possession of the large one on the Mamelon, which was too much exposed to the Russian fire. He, however, placed his party under cover of the walls and trees and kept them there.

A truce had been agreed on that day for the purpose of removing the dead and wounded from the front, and the instant the flag was hoisted, Donnelly posted his party as sentries round the base of the small Mamelon, and prevented the Russians from ascending the knoll. As soon as night fell a communication was begun between the trenches and the nearest pit, which was enlarged and converted to our use. The other lodgment on the knoll was destroyed, and all the Russian communications filled in.

This incident is fully recorded in the official journal of the siege. Strangely enough, Mr. Kinglake, in his elaborate work, has utterly ignored the whole affair. According to his version the cemetery was never abandoned, but was held throughout the night of the 18th by the force which had captured it.* Not only is the journal of the siege, which was compiled from the daily reports, very clear, but we have also the contemporary evidence of Dr. Russell, who says—

"On the following morning" (*i.e.* the 19th) "an officer of Engineers, Lieut. Donnelly, heard, to his extreme surprise, that the position for which we had paid so dearly was not in our possession. He appreciated its value; he knew that the Russians had not yet advanced to re-occupy it. With the utmost zeal he set to work among the officers in the trenches, and begged and borrowed some thirty men, with whom he crept down into the Cemetery, just before the flag of truce was hoisted." (This was for the burial of the dead and recovery of the wounded.) "As soon as the armistice began the Russians flocked down to the Cemetery, which they supposed to be undefended; but to their great surprise they found our thirty men posted there as sentries, who warned them back, and in the evening the party was strengthened." †

Two Victoria Crosses were gained by Royal Engineer Officers on this day—Lieutenant Gerald Graham, for leading the ladder party, and also for bringing in wounded officers and men; and Lieutenant Howard Elphinstone, for bringing in wounded officers and men.

On June 28th Lord Raglan died. He had been for some time in feeble health; but there is no doubt that the recent disaster was the cause of his sudden collapse. He was succeeded in the command of the army by Lieutenant-General James Simpson, who had for some months acted as the Chief of the Staff.

* Kinglake's "Invasion of the Crimea," vol. iv. pp. 202-3.
† Russell's "Expedition to the Crimea," p. 364.

It was now determined to add greatly to our weight of metal, and no efforts were spared to establish fresh batteries, and to bring up the ammunition that so large an armament would require.

On August 16th the position on the Tchernaia, which was held by the French and Sardinian troops, was attacked in force by the Russians. After a heavy battle the enemy were driven back with great loss. On the following day the batteries opened a certain amount of fire, intended to prevent the garrison from annoying the advanced trenches, which were being steadily pushed nearer and nearer to them, especially in front of the Malakoff; and this fire was maintained with more or less intensity until the beginning of September.

By this time the following additions had been made to the British attacks. On the Left six new batteries had been constructed, Nos. 15, 16, 17, 18, 19, and 20. In the Right Attack, also, six new batteries were formed, Nos. 17, 18, 19, 20, 21, and 22. Two new parallels, the fourth and the fifth, with their communications, had been established, and a trench was pushed out in front of the fifth parallel, towards the salient of the Redan, reaching to within 190 yards of it.

Meanwhile many changes of *personnel* had taken place. The following officers had joined the army:—Captains A. C. Cooke, F. Du Cane, F. Nicholson, and C. H. Sedley. Lieutenants J. Ranken, F. Brine, W. H. H. Dumaresq, P. H. Scratchley, and G. N. Kelsall. Major Montagu had also returned from being a prisoner, having been exchanged early in August. On the other hand, Lieutenant-Colonel Tylden, Captains Jesse and Dawson, Lieutenants Murray, Graves, and Lowry, had all been killed. Captains Hassard, Armit, Belson, Lieutenants Somerville, Scott, and Darrah, had been invalided; of whom Captain Belson and Lieutenant Somerville had died at Scutari; whilst Lieutenant James had been taken prisoner.

On September 3rd the chief Artillery and Engineer officers of the two armies were once more summoned to assemble. They gave in their joint opinion "that the siege works have arrived at such a point that the assault ought to be given to the place after a short delay." They observed that the French left attack on the town had been stationary for a long time, no further advance being practicable. The British advance on the Redan also could be carried no farther. At the Malakoff the French Artillery had obtained a marked superiority, and in consequence the approaches were within twenty-five metres of the enceinte. Although it might be possible to push farther forward, and blow in the counterscarp, they thought the delay to enable this to be done

would be prejudicial. The French extreme right attack in front of the Careening Bay (or little Redan) was also within twenty-five metres of the place, and could approach no nearer owing to the rocky soil. Under these circumstances "the moment to give the assault has arrived." It was decided that the principal attack should be on the Malakoff and Little Redan.

"If we succeed in seizing and lodging ourselves securely in these works, the fall of the Karabelnaia suburb becomes inevitable."

It being decided that these were to be the main attacks, it was considered necessary to distract the garrison by subsidiary assaults.

"For this purpose, as soon as the success of the Malakoff front shall appear certain, the English at a concerted signal should give the assault to the Redan, and the French would at the same time advance on the enceinte of the town."

This project was approved, and on September 5th the bombardment became general, every gun that could be brought into play having opened on that morning. The British batteries consisted of 202 guns and mortars, and the French of 627. The calibre of the British guns was, however, in many cases superior to that of their allies. By these figures it will be seen that the weight of metal for this bombardment was of the most stupendous character, far exceeding what had ever before been brought into play on a similar occasion.

On September 6th the orders were issued for the British assault on the Redan. They differed considerably from those issued before :—

"In all probability the fire from the two flanks of the Redan may not be completely subdued at the period when the assault may require to be made, it therefore appears advisable that one attack only should be made and this by a strong column moving direct on the line of capital to the salient of the Redan ; it is therefore proposed that this column should consist of 1,000 men, who should move from the trenches in one compact body."

The assault was ordered for twelve noon on September 8th. Punctually at that hour the French columns rushed from their trenches, and the Malakoff was in their possession in a few moments. As soon as the tricolor was hoisted on the parapet as a token of capture, the signal was given for the British advance on the Redan. The story of this attempt and its failure is best told in the words of the two principal Engineer actors, Captain Montagu, attached to the General leading the column, and Lieutenant Ranken, who had charge of the ladder party. The report of the former ran thus :—

"Upon the signal being shown that the French were in possession of the Malakoff Tower, the order was given to the troops to get ready. Such, however, was the excitement of the moment, that 100 men or more mistook the order, and were over the parapet before it was possible to stop them, and it was found necessary to let them all go, although by doing so the ladder party under Lieutenant Ranken had not sufficient time to get all the ladders on the move and placed before the assaulting party arrived, they having less difficulty in passing the abattis, the passing of which, however, did not prove any serious obstacle. The first parties formed and moved off very well, but after that the showers of grape and rifle balls, &c., upon the succeeding parties sent from the flank of the Redan and Garden batteries caused the men to run to the head of the single sap, from whence, after a short halt to take breath, they made another rush towards the salient angle, but by this means they were no longer in regular formation. All the men crowded on the salient angle so as to be out of the way of the flanking fire. To prevent this first check, I obtained permission at one time from the general to allow the men pressing up from the left of the fifth parallel to go up the single sap and start from the head of it. After about two hours' heavy firing, the men all returned to the fifth parallel, and no further attempt was made during the afternoon. General Wyndham, who was in charge of the assaulting column, informed me that he had been inside the Redan with some sixty or eighty men, who got behind a traverse and who could not be induced to go further. . . . I have great pleasure in informing you that Lieutenant Ranken performed his very dangerous service to my great satisfaction, placing the ladders very judiciously, and he afterwards succeeded in making the descent and ascent such that the troops experienced no difficulty in getting up without ladders, and he has expressed himself perfectly satisfied with the conduct of the Sappers under his charge. I regret to say that Captain Sedley, R.E., who was in charge of the working party to form the lodgments, was wounded, and also Lieutenant Elphinstone, R.E., who was on duty in the trenches; and of the Sappers, two were killed and eleven wounded."

Lieutenant Ranken's report is more detailed:—

"I was ordered to advance with the ladder party immediately after the skirmishers had been thrown out. The excitement among the troops in the trenches, however, was so great when they perceived that the French were masters of the Malakoff, that they rushed unexpectedly over the parapet before the ladder party had time to get clear of the advanced trench. I got my sappers to the front as soon as possible with their crowbars and axes, and ran on with the advanced ladders. The enemy opened a heavy musketry fire upon us, and occasioned many casualties among the ladder party; however, the men pressed rapidly forward. The abattis did not prove a serious obstacle, and the ladders were soon lowered into the ditch, and reversed from counterscarp to escarp. They were placed on the salient in such a position that the men descending or ascending them were scarcely, if at all, exposed to the flanking fire of the Russians up the ditch of each face. The ditch

of the Redan itself is not more than 15 or 16 feet deep, if so much, and only 8 feet broad, and there was no difficulty experienced in forming a ramp for the men to ascend. The working party told off for me were not to arrive till the whole of the assaulting column had come up. I however employed the small party of Sappers under my charge until their arrival with a few men of the assaulting party in forming a small parapet across the ditch of the proper left face up which the enemy were pouring volumes of musketry. Gabions were torn down from the counterscarp and filled, as well as possible, with loose stones, and a partial cover was soon obtained. The fire of the enemy was, however, so hot, that after more than half-an-hour the work had to be suspended temporarily. A small caponnière was also in course of construction across the ditch of the proper right face near the salient, and a fair cover had been obtained there when the assaulting column retreated. A portion of my working party had arrived just before the troops withdrew, and they were engaged upon these caponnières, and in forming an easy ramp into the ditch from the glacis when the repulse took place. The Sappers who accompanied the assaulting column, and whose names are appended, all behaved well, and exerted themselves in carrying out my orders to the best of their power. I beg especially to call your attention to the conduct of Serjt. Leach, 2nd Company, who was wounded, Corporal Curgenven, who, with Privates Harris and Weatherspoon, were up with the leading ladders, and who worked hard in pulling down gabions and placing and filling them according to my instruction, and of Lance-Corporal Baker, who came up subsequently with the working party of the 77th, and who showed coolness, zeal, and activity in executing my orders."

General Jones, who was at the time too ill to move, insisted on being present. He was carried down into the trenches in a litter, and remained with General Simpson throughout the attack.

In addition to the casualties amongst the Royal Engineers, Major Chapman, 20th Regiment, Assistant Engineer, was mortally wounded, and died on September 20th.

This was the last operation of the siege. The French had made good their grip on the Malakoff in spite of the most furious attempts of the Russians to recover that vital point. There is no doubt that the British storm of the Redan, unsuccessful as it was, enabled their allies to secure themselves within their prize. For two most critical hours the enemy were compelled to divide their forces, and to devote a large portion of them to the retention of the Redan. During those two hours the French were able to block up all the rear openings by which access was obtained to the Malakoff from the interior, and at the same time create a communication with the trenches. A flying sap was established to the crest of the counterscarp, and a bridge of planks thrown over the ditch. The troops were therefore poured into the work

rapidly, and without confusion or exposure. Unquestionably this operation was much aided by the distraction caused by the other attacks, although they all failed. Most fortunately for the success of the siege, the one point that was secured was the key of the position. The Russians were well aware of that fact, and shortly after darkness set in they began that masterly retreat to the north side which reflects so much credit on those who planned it, and also on those who so steadily and quietly carried it out. Before midnight the first of the explosions took place, by which the magnificent forts erected at such cost to protect the harbour, were being destroyed by their own constructors, and a constant stream of men was observed to be passing across the bridge that led from the south to the north side of the town.

About 1 o'clock on the following morning, Corporal Ross, Royal Sappers and Miners, being struck with the unwonted silence in the Redan, crept cautiously from the advanced sap and clambered into the work, which he found had been abandoned by its garrison. He returned and reported the circumstance to Captain De Moleyns, the Engineer Officer in charge of the attack, who verified the discovery. Before long many of the parties who had been sent out to bring in the wounded also found their way in, and pursued their investigations in all directions without meeting an enemy. It was now clear that the whole line was evacuated, and the question arose whether it should not be at once occupied. After some deliberation it was decided that, as there was great probability that the work was mined, it would be better to await the morning before stationing any men there, no one being permitted to return to the spot meanwhile. Captain De Moleyns had, however, on his visit, with the assistance of Serjeant Landrey and Corporal Ross, succeeded in bringing back two wounded men whom they had found in the Redan, one of whom was a Sapper.

At the end of two days the British entered the place and occupied the Karabelnaia suburb, the French being posted in the town. A mixed Commission was formed, composed of officers of both armies, to take an inventory of all ordnance and military stores that were found in the fortress, in order that an equitable division might be made between the two armies. Twelve British members sat on this Commission, of whom two were Engineers, Major Stanton and Captain Montagu.

On the morning after the abandonment of the lines by the Russians, Lieutenant Cowell, R.E., penetrated into the town as far as Fort Paul, then in ruins from the recent explosion of its magazine. Great care had been taken to leave behind no trophies, but Lieutenant Cowell discovered that the flag of the fort had not been removed, but was still attached to the prostrate staff, which

was buried in the ruins. With some difficulty he succeeded in obtaining possession of it, and brought it away with him. This is the only Russian flag that fell into our hands. It has been presented by Sir John Cowell to the Museum of the Royal United Service Institution. He writes thus on the subject to the author:—

"The fort was blown up by volunteers, as Todleben remarks in his account of its destruction, and they, like others, appear to have forgotten the flag at the moment, and doubtless thought afterwards that its destruction was *certain* in the great explosion that followed their firing the Magazine. As it happened, it fell where it had stood, at the salient of the ruins, not much injured by the crash, though it is but a tattered and patched emblem of what it once was, and as it was well known to the besieging forces. I think that the last poor fellow I helped that morning in my wanderings was one of these Volunteers, who could not get clear of the explosion in time to save his passage, and he was badly hurt on the left side and leg."

The following despatch was forwarded by General Jones to General Simpson, and through him it passed to Lord Panmure:—

"Head Quarters, Sebastopol, 9th Sept., 1855.

"Sir,—The long and eventful siege of Sebastopol having been brought to a successful termination, I beg leave to draw your Excellency's attention to the services of the Officers of Royal Engineers, who have been employed in carrying on the siege works. Many of these officers have been continuously on duty since the 8th of October last, and have been in the trenches 76, 97 and 108 days and nights. I beg leave to mention the name of Lieut.-Col. Chapman, C.B., who has been employed with the army since the arrival of the first detachment at Gallipoli; and since March last, when Colonel Gordon was wounded and unable to perform the duties of the siege, as senior officer of Engineers he has had to make all the necessary arrangements for the daily carrying on of the duties; this has been performed by him in the most zealous and energetic manner, under great exposure to fire, to my entire satisfaction. Major Bent has been doing the duty of director of the left attack since March last; the duties of that officer are very onerous, and these he has performed in the most zealous and praiseworthy manner. During the above period Major Bent must have been under fire twice, if not thrice, in every 24 hours. Capt. Browne, who was recently severely wounded, performed for some time the office of director of the Right attack, and so has also Capt. Cooke. Capt. Ewart, the Adjutant of the Sappers and Miners, has carried on the duties of the parks, which are extremely troublesome and requiring great attention, in the most zealous and satisfactory manner. I do not trouble your Excellency with the names of the Subalterns of Engineers, as they are not eligible for promotion under the existing regulations. Nothing could exceed the regular and praiseworthy manner in which they have invariably performed their duties. Several have been more than once wounded, and many have died from wounds or from sickness caused by

exposure to the great heat in the trenches. I wish to bring prominently under your notice Major Bourchier, my brigade major, who has rendered me very great assistance throughout the whole siege, and Lieut. Cowell, my aide-de-camp, who has, during the siege, proved himself most useful by his professional knowledge as an officer of Royal Engineers, and by his general military acquirements. Of the Assistant Engineers, I cannot speak too highly in praise of the zeal and intelligence they have displayed; and I beg leave to enclose the names of those who, from their long service at this siege, I consider deserving of promotion."

The names here referred to were Lieutenant-Colonel Chapman (who had already gained two steps in rank with a C.B.), Majors Bent, Bourchier, and Stanton (who had already each gained one step in rank), Captains the Hon. H. F. Keane, Hassard, Browne, Montagu, Cooke, De Moleyns, Armit, Ewart, Porter, Nicholson, Sedley, Ravenhill, and Ranken. The name of Colonel J. W. Gordon was not included, as he had already gained three steps in rank, besides the C.B. and A.D.C. to the Queen. He was consequently not available for further promotion. General Jones had also already received the rank of Lieutenant-General with the K.C.B. The officers named in the above list all gained a step of brevet promotion.

It will be seen that in the above despatch Sir Harry Jones declines to name the Subalterns of Royal Engineers; but he followed it up by another, especially on that subject, which ran thus:—

"This long siege of 337 days having been brought to a successful termination, I am desirous to bring under your Excellency's notice the services of a most gallant and zealous body of officers. I allude to the subalterns of Royal Engineers, who, from the constitution of their Corps, in which promotion goes by seniority, are never promoted into other branches of the service, which was the reason why I did not include in my recommendatory list the names of those individuals who have particularly distinguished themselves, trusting to the opportunity which would be afforded me of bringing their names forward specially. During the recent siege the duties of the trenches fell very severely on the subalterns of Engineers; throughout the whole of the winter they were constantly on duty, and as their numbers were small, the tour of each individual returned at short intervals; nothing but great zeal and spirit carried them through the severe work they had to perform. The following short statement will enable your Excellency to see how a Subaltern of Engineers was called upon to do duty in the trenches, several more than once wounded and others contused. The following figures refer to some of the survivors' days or nights—33, 108, 32, 46, 97, 62, 65, 78. It must be borne in mind that those tours of duty always brought the individual under fire, and in the winter months they were exposed to all the severities of the season. Several of the subalterns

distinguished themselves on several occasions upon the attacks on rifle pits, quarries, &c. Such services, I trust, will not be allowed to pass without reward. The following are the names of the officers who particularly distinguished themselves:—Lieutenants H. De Vere, A. C. Fisher, H. C. Elphinstone, G. Neville, W. O. Lennox, W. C. Anderson, G. Graham, G. Philips, C. N. Martin, C. G. Gordon, and G. Donnelly."

To this Sir John Burgoyne appended as a minute:—

"I would strongly recommend Lieutenants Stopford, Cowell, Pratt, and Drake being added to this list."

General Simpson forwarded the application to the Commander-in-Chief thus endorsed:—

"I can most conscientiously corroborate every word expressed by Sir Harry Jones in this letter. The arduous and always dangerous duties in which the Engineer Officers were continually employed have all along during this siege been deserving of my praise and admiration. Their untiring perseverance and frequent acts of gallant conduct are beyond all praise. And I here desire to record my high approbation of those officers named by Sir Harry D. Jones, and my strong recommendation of them to Viscount Hardinge's favour."

It will hardly be credited that, after such strong and powerful appeals in their behalf, appeals not for favour but for a simple act of justice, nothing was done in the way of promotion for the Engineer Subalterns who had earned so much well-merited praise by their brilliant services. A few of them who were fortunate enough to attain to the rank of Captain *by seniority* before the outbreak of the Indian Mutiny or the subsequent Chinese War, were hurried out thither to gain the promotion which had been justly earned in the Crimea. As regards the remainder, red tape was too powerful, and those of them who had no opportunity given them for subsequent distinction, have either died or reached the higher ranks of the service without any acknowledgment for their gallantry and zealous conduct in that deadly siege.

The following Non-commissioned Officers and Sappers received the Victoria Cross for gallant deeds performed during this eventful siege:—

Colour-Serjeant Henry McDonald.—April 19th, 1855.

> For gallant conduct, when engaged in effecting a lodgment in the enemy's Rifle Pits, in front of the Left advance of the Right Attack on Sebastopol; and for subsequent valour, when, by the Engineer Officers being disabled from wounds, the command devolved upon him, and he determinately persisted in carrying on the sap, notwithstanding the repeated attacks of the enemy.

Colour-Serjeant Peter Leitch.—June 18th, 1855.

For conspicuous gallantry in the assault on the Redan, when, after approaching it with the leading ladders, he formed a caponnière across the ditch, as well as a ramp, by fearlessly tearing down gabions from the parapet, and placing them and filling them until he was disabled from wounds.

No. 997, Corporal John Ross.

Distinguished conduct on July 21st, 1855, in connecting the 4th Parallel Right Attack with an old Russian Rifle Pit in front.

Extremely creditable conduct on August 23rd, 1855, in charge of the advance from the 5th Parallel Right Attack on the Redan, in placing and filling twenty-five gabions under a very heavy fire, whilst annoyed by the presence of light balls.

Intrepid and devoted conduct in creeping to the Redan in the night of September 8th, 1855, and reporting its evacuation, on which its occupation by the English took place.

No. 1078, Corporal William J. Lendrim.

Intrepidity—getting on the top of a magazine and extinguishing sand bags which were burning, and making good the breach under fire, on April 11th, 1855.

For courage and praiseworthy example in superintending 150 French Chasseurs, on February 14th, 1855, in building No. 9 Battery, Left Attack, and replacing the whole of the capsized gabions under a heavy fire.

Was one of the four volunteers for destroying the farthest Rifle Pit on April 20th.

No. 854, Sapper John Perie.

Conspicuous valour in leading the sailors with the ladders to the storming of the Redan on June 18th, 1855. He was invaluable on that day.

Devoted conduct in rescuing a wounded man from the open, although he himself had just previously been wounded by a bullet in the side.

With reference to the entry as regards Corporal Lendrim, it may be mentioned that Corporal James Wright joined him in the deed of gallantry on April 11th, but not having the same claims for other services did not receive the Victoria Cross.

On the previous day, viz., April 10th, Sir Harry Jones and his Aide-de-Camp, Lieutenant Cowell, were standing in the 21-gun battery, on the right attack, when a mortar shell fell on the roof of a magazine, close to them, and bursting there dislodged several sandbags. Lieutenant Cowell, followed by a Corporal of Sappers, dashed immediately into the magazine, to ascertain if any injury had been incurred. This act of gallantry was witnessed by Sir Harry Jones, who desired that it should be recorded.

The total number of Engineers who from first to last took part in the Crimean War was sixty-nine. Of these thirteen were killed, six died of disease or accident, thirteen were wounded, and twelve invalided. Of the nineteen Assistant Engineers, two were killed and five wounded. Nine Companies of Royal Sappers and Miners were gradually added to the army. It is not possible to give the actual number of non-commissioned officers and privates who landed in the Crimea, but it probably was about 750. Of these fifty were killed, ninety-two wounded, and sixty died of disease.

It may be interesting to record the following numbers of the principal engineering materials used at the siege:—Common gabions, 17,015; iron gabions, 2,307 (these were made of the strap iron by which the compressed hay trusses were bound); fascines, 2,780; sand bags, 336,345; bread bags, 7,413; hide bags, 40.

The main object in the siege of Sebastopol having been the destruction of the Russian fleet and the magnificent docks that had been constructed for its maintenance, the place had no sooner fallen into the possession of the allies than orders were issued to prepare a project for the demolition of the latter. On September 15th, a party consisting of one serjeant and nine Sappers, with a few miners of the line, commenced work by sinking shafts behind the revetments to ascertain their exact form and dimensions. On September 19th, Lieutenant Graham, Royal Engineers, was appointed to take charge of the party; and he and his men were from that time quartered in the dockyard, for the purpose of continuing the preliminary work. By September 24th sufficient had been done to enable the project to be drawn out, and further operations were suspended for a month. On October 24th, sixty more Sappers, with a Captain and Subaltern of Royal Engineers, and a party of fifty men of the line, were added, and the actual work of destruction begun. Other officers of Engineers were afterwards attached.

The docks of Sebastopol were five in number, and were placed three to the south and two to the north of a large rectangular basin. This basin was on a level of about 27 feet above the sea, and was connected by a short canal, in which were three locks to overcome the difference of level. The water supply to the basin and docks was furnished from the Tchernaya by means of an aqueduct. The destruction of this magnificent establishment was undertaken partly by the French and partly by the British, the portion allotted to the latter being the three southern docks and one half of the basin. The officers employed in the work were—Lieutenant-Colonel Lloyd, C.R.E., assisted by Colonel J. Gordon, under whom were Major Nicholson, Captain Cumberland, Lieutenants C. G. Gordon and G. Graham. Towards the end of the

time Lieutenant Edwards was added to the number. The docks were demolished by means of a series of three lines of mines, one under the centre of the floor, and the other two behind the revetments of the side walls, continued so as to meet round the semicircular end. For the three docks there were 134 such mines, and 22 additional ones for the half of the basin that fell to the British share.

The average charge in each mine was for the side revetments about 450 lbs. and for the floor mines 160 lbs. Owing to the dampness of the shafts and galleries that had to be excavated to reach the proper sites for the mines, it was found objectionable to trust to either powder hose or Bickford's fuze for firing purposes. Voltaic batteries were therefore used. There were ten of these of ten cells each, which had been sent out under charge of Mr. Deane, by the Admiralty, to be used for destroying the vessels sunk at the mouth of the harbour. Mr. Deane and his apparatus were lent to the Engineers to carry out this part of the work.

No serious inconvenience from water was experienced until the middle of November, by which time, the shafts having attained a considerable depth, it began to accumulate rapidly, and great difficulty was then found in getting rid of it. On the night of December 15th the docks were deluged by a tremendous storm of rain, which filled all the shafts and left two feet of water standing on the floors of the docks. This was followed by very severe frosts a few nights later on. The men suffered acutely from the change of temperature, which in the shafts was moist and warm, whilst on returning to the surface they were exposed to a keen frost. During the progress of the work the Russians at times fired a good deal in the direction of the docks, but their shot and shell fell short, only one Sapper and one linesman having been wounded.

As soon as this operation had been carried out, the destruction of what was known as the White Buildings, an extensive range of barracks, was undertaken. The officers employed in this work, under Lieutenant-Colonel Lloyd, were Major Ranken, and Lieutenants C. G. Gordon and G. Graham. The demolition of the buildings was satisfactorily effected, with one sad casualty. On February 28th, at 4 p.m., a series of mines was fired simultaneously, but owing to the badness of the fuze many of them missed fire, and fresh arrangements had to be made to complete the ignition of the unexploded charges. Major Ranken himself undertook to fire the focus of four charges in the gable of one of the buildings at 5 p.m. This was to be done by means of a three-feet length of fuze. Unfortunately some loose powder became ignited, and exploded the four mines before Major Ranken could

escape. His body was not found till the next morning, when it was extricated from the mass of ruins in a very mangled and crushed condition. This was the last British life lost in the war,* and the sadness of the accident was accentuated by the fact that he had led the storming party on September 8th with the most dashing gallantry, and had escaped unharmed.

The last military operation in which the Engineers took part was the capture of the fort of Kinburn, on the southern spit, at the confluence of the Dnieper and the Boug, the object being to establish a blockade of those rivers. Major Bent was appointed Commanding Royal Engineer, Captain Nicholson was in command of the Company of Royal Sappers and Miners, having with him Lieutenants Gordon and Scratchley. The fort was surrendered after a naval attack, the troops having little or nothing to do with it. They were, however, landed, and advanced some twenty miles towards Cherson, destroying everything and devastating the country as they proceeded. The Sappers were employed during this time in restoring the fort after the injuries it had sustained during the action, and in making it safe from attack on the land side. It was then garrisoned by a considerable French force, and held until the peace.

This chapter must not be concluded without a brief reference to very gallant work by an Engineer officer in the defence of Kars. This fortress was the main Turkish outpost on its eastern frontier. General Williams, R.A., undertook to conduct its defence against an overwhelming force of Russians under General Mouravieff. He was aided in this work by three British officers—Lieutenant-Colonel Lake, of the Engineers; Major Teesdale, of the Artillery; and Captain Thompson, with whom was also Dr. H. Sandwith.

The gallantry and tenacity with which, under every difficulty and every disadvantage, the place was held, roused the admiration of Europe; and, but for the fact that it was being carried on at the same time as the more important siege of Sebastopol, it would have attracted still more notice. The earthworks, against which the Russians hurled themselves in vain, and which cost them so heavily, were the design of Lake, and to him belongs the credit of the defence as surely as that of Sebastopol was attributed to Todleben. Colonel Lake always spoke most modestly of his own share in the operation, and but once does he allude to the subject when he says:—

"You will not be surprised at my feeling a little pride at my works answering so well, when I tell you that every single battery and line

* It is a curious coincidence that the first and last fatal casualties during the war were both Engineers, Lieutenant Burke and Major Ranken.

that I have constructed on the height was more or less engaged, and the injury done to them is very trifling. They were so placed as to give flanking fire in every direction, and no troops could stand it . . . . As for the Mushir, his joy was unbounded. When I came below after the affair was over, he took me by both hands, and turning to the General" (Williams) "he said, 'I was always very fond of the Meer Ali Bey'" (meaning Colonel Lake), "'but I do not know what I can say to him now.'"

This was after the general assault of September 29th, 1855, of which Williams wrote as follows:—

"This has been a glorious day for the Turkish arms. The Russian army attacked the heights above Kars, and on the opposite side of the river at day dawn, the battle lasted seven hours and a half, when the enemy was driven off in great disorder, leaving 2,500 dead in front of our intrenchments, and about 4,000 muskets; his numerous wounded were carried off during the fight. Let no one say in future that Turks will not fight if they are properly cared for. Colonel Lake, Major Teesdale, and Captain Thompson, behaved splendidly."

On another occasion he wrote:—

"Tell Sir Hew Ross what men I have to assist me, in Lake, Teesdale, and Thompson; they certainly deserve anything they may get in future, for all this working and watching."*

The siege, or rather blockade, lasted for six months, from the beginning of June to the end of November, 1855. At the expiration of that time the garrison was *starved* into surrender—all the attempts to force the lines in the interim having failed with heavy loss. The five brave Englishmen (including Dr. Sandwith) were sent as prisoners into the interior of Russia, from whence they were released on the conclusion of peace. For his services at Kars Lake was made a C.B. and an aide-de-camp to the Queen, he received the second class of the Medjidie, and was appointed Officer of the Legion of Honour. He was also transferred to the British army as a Lieutenant-Colonel unattached—his health having so far broken down that he was unable to continue in the service of the East India Company.

* The above extracts are taken from Lake's "Kars, and our Captivity in Russia."

CHAPTER XX.

The Indian Mutiny, 1857-1859.

Mutiny at Meerut—Revolt at Delhi—Force assembled to recover the City—Description of Delhi—Arrival of Siege Train—Erection of Batteries—Detail of Assaulting Columns—Blowing in the Kashmere Gate—Progress of the First and Second Columns—Death of Nicholson—Completion of the Capture—Engineer Losses—Defence of Lucknow—Description of the Residency—Mining and Countermining—First Relief under Outram and Havelock—Second portion of the Defence—Relief by Sir C. Campbell—Outram holds the Alumbagh—Return of Sir Colin—Description of Lucknow—Attack by Campbell and Outram—Capture of the City—Gallantry of Innes and Prendergast—Capture of Jhansi—Journal of proceedings of 4th and 23rd Companies of Royal Engineers.

The mutiny of the Sepoy army of India, in 1857, led to a war in which for the first time the officers and men of the Royal Engineers fought side by side with their *confrères* in the East India Company's service. As the result of this war was the extinction of that great Company, and the absorption of its forces, including its Engineers, into the Imperial army, it is necessary to trace its course in this work, although the earlier portion, which in many respects is the most interesting and picturesque, took place before the Royal Engineers had time to reach India.

The siege of Delhi, and the defence of the Lucknow Residency, were both carried on by Engineers on the Indian establishment. To them alone belongs the distinction gained by those eventful operations, and it is with a feeling of legitimate and fraternal pride, that their comrades of the Royal Engineers contemplate the great deeds done by them, before they were absorbed into the Imperial corps.

The mutiny first broke out at Meerut, on Sunday, May 10th, 1857, when the Sepoys at that station, after murdering as many of their officers as they could seize, left for Delhi, which they reached on the following day. Here their arrival was the signal for the revolt of the entire native force then stationed in and near the city. Those of the European residents who could escape fled to different places of safety, but a large number were ruthlessly massacred; and here, as at Meerut, the officers of the mutinous regiments were mostly slain in the vain endeavour to quell the outbreak.

The puppet sovereign of Delhi at that time was Bahadour Shah. He had been supported by the British Government in his visionary kingdom, though beyond the walls of the city he was an Emperor only in name. Now, however, the time seemed to have arrived when he could once more assert the claims of his forefathers; and he placed himself at the head of the movement which was intended to sweep away the British from the peninsula and revive the native rule.

Delhi, in consequence, became a focus of the insurrection. It was, therefore, imperatively necessary at any cost, and as promptly as possible, to crush it at its fountain head, otherwise India would unquestionably be lost, and the entire European population doomed to slaughter.

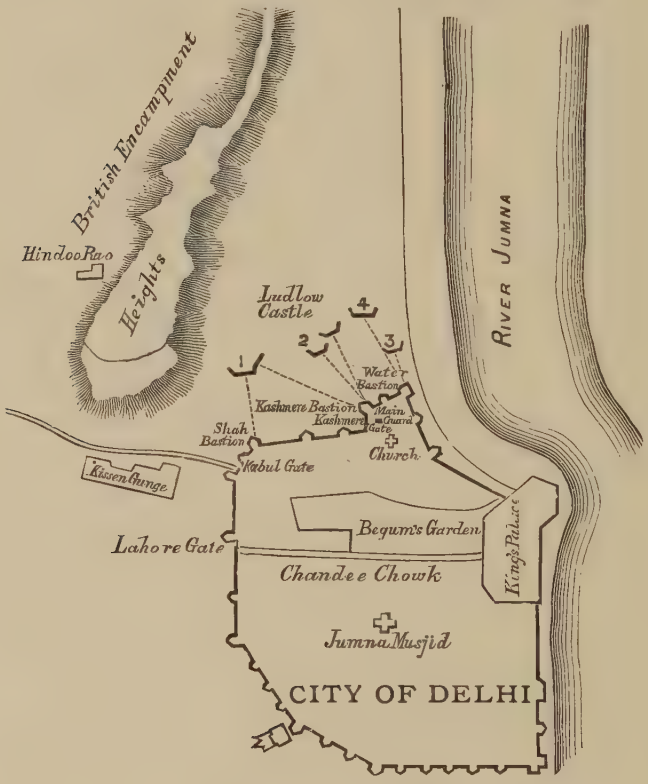
General the Hon. G. Anson was at the time Commander-in-Chief, and he lost no time in assembling as powerful a force as could be got together, with which he marched against the city. Whilst on the road he was seized with cholera and died; the command then devolved on Major-General Sir H. W. Barnard. The Meerut European force left that station on May 27th, and after some skirmishing on the road, joined the main body at Aleepore on June 7th. General Barnard moved forward on the following day. His troops consisted of the 9th Lancers, and two squadrons of the 6th Dragoon Guards, the 60th, 75th, and 87th Regiments, with the 1st and 2nd European Bengal Fusiliers, a small force of Artillery and some Sappers.

The mutineers had intrenched themselves outside Delhi; it was therefore necessary to dislodge them. This was successfully accomplished, and before nightfall Barnard's army was encamped on the high ground, about two miles to the north of the city. At this time it was in no position to undertake a siege; indeed, it seemed almost an impossibility for it to maintain itself on the spot selected for camp, which had been the site of the cantonments of the force stationed at Delhi. Still it was most important that at least a semblance of besieging the mutineeers within their chosen stronghold should be maintained, and this General Barnard was able to effect whilst awaiting reinforcements.

The following description of Delhi is taken from the official report of Lieutenant-Colonel Baird Smith, the Chief Engineer:—

"The eastern face of the city rests on the Jumna, and, during the season of the year when our operations were carried on, the stream may be described as washing the base of the walls. All access to a besieger on the river front is therefore impracticable. The defences here consist of an irregular wall with occasional bastions and towers, and about one half the length of the river face is occupied by the palace of the King of Delhi, and its outwork, the old Mogul fort of Selinghur. The river

may be described as the chord of an arc, formed by the remaining defences of the place. These consist of a succession of bastion fronts, the connecting curtain being very long, and the outworks limited to one crownwork at the Ajmeer Gate and a Martello tower mounting a single gun at such points as require some additional flanking fire to that given by the bastions themselves. The bastions are small, mounting generally three guns in each face, two in each flank, and one in embrasure at the salient. They are provided with masonry parapets about 12 feet in



Siege of Delhi.

thickness, and a relief of about 16 feet above the plane of site. The curtain consists of a simple masonry wall or rampart 16 feet in height, 11 feet thick at top, and 14 or 15 feet at bottom. This main wall carries a parapet loophole for musketry, 8 feet in height and 3 feet in thickness. The whole of the land part is covered by a berm of a variable width, ranging from 16 to 30 feet, and having a scarp wall 8 feet high; exterior to this is a dry ditch, of about 25 feet in width

and from 16 to 20 feet in depth. The counterscarp is simply an earthen slope easy to descend. The glacis is a very short one, extending only 50 or 60 yards from the counterscarp ; using general terms it covers from the besiegers' view one half to one third of the height of the walls of the place."

The enceinte was about seven miles in circumference, enclosing a space of three square miles. Such was the city of Delhi, and within its walls was massed an army of native troops trained to war and discipline, excited to a pitch of religious frenzy, and burning with the hope of shaking off for ever the yoke of the European.

The force which had taken up its position on the northern heights of the old cantonment has been already detailed. It was afterwards from time to time strengthened by the arrival of reinforcements sent down from the Punjab by Sir John Lawrence, and also by dribblets from other sources ; but for many a long day it was compelled to confine its operations to the bare maintenance of the ground on which it stood. The Engineers who from first to last served under Lieutenant-Colonel Baird Smith were as follows :—Major Laughton ; Captain Taylor ; Lieutenants Walker, Home, Salkeld, Greathed, Maunsell, Tennant, Gulliver, Stewart, Warrand, G. Chesney, Brownlow, Geneste, Hovenden, Medley, Perkins, E. Walker, Long, Thomason, Tandy, M'Neill, Murray, J. Champain, Pemberton, Ward, Fulford, Carnegie, Thackeray, Forbes, and Jones.

The following officers acted as Assistant Engineers—Lieutenant Bingham, Bengal Sappers and Miners; Lieutenants Nuthall, Gustavinski and Knowles, of the Bengal Staff Corps ; and Captain Greensill, of the 24th Regiment.

From June 8th to the beginning of September the troops (it would be out of place to call them besiegers) held their own in spite of constant and harassing attacks from the city. Their losses during the interval from casualties and sickness, principally cholera, were very severe, and would have almost extinguished them but for the reinforcements which slowly found their way into camp and supplied the vacancies.

At length at the beginning of September the long-looked-for addition to the siege train arrived. It consisted of six 24-pounders, eight 18-pounders, six 8-inch howitzers, and four 10-inch mortars, with an ample supply of ammunition. This was followed on the 8th by the arrival of the Jummo Native Contingent of 2,200 men with four guns, which raised the numbers in camp sufficiently to attempt the assault.

On the night of September 6th the first of the proposed siege batteries was established for six 9-pounders and two 24-pounders under Hindoo Rao's house, and to this was added two days later another to its left for five 18-pounders, four 24-pounders, and one 8-inch howitzer, called No. 1, intended to play on the

Shah and the Kashmere Bastions. A heavy battery (No. 2) was placed in front of Ludlow Castle (the late residence of the Delhi Commissioner, who had been murdered when the city was seized). It consisted of nine 24-pounders, two 18-pounders, and seven 8-inch howitzers. The Kashmere Bastion was the object of its fire. As regards the effect produced by this battery Colonel Thackeray writes—

"The dreadful state of ruin which it now (twenty-nine years after the siege) lies in attests the accuracy of the fire of the British guns. The main breach was made at the Kashmere Gate." He continues: "On the top of the ridge stands Hindoo Rao's house, which was the main picket of the—if it must be so called—besieging force, and close by is a much injured domed building, which was also used as a picket. On the extreme right of the ridge, which is considerably higher than the city, some 1200 yards from the walls, is the site of what was once the right Battery. The well known Sammy House, a small temple below this, was the chosen battle ground on many occasions, where there was a picket of the besiegers; and so closely was the attacking force sometimes pressed, that this advanced picket often could not be relieved for days."

The ground on which this battery stood, as well as that between it and the river, had only just been seized and occupied; to its left and close to the river, two additional batteries were constructed, No. 3 for eight 18-pounders and 12 Cohorns, and No. 4 for four 10-inch and six 8-inch mortars.

Cooper in his description of the siege writes—

"Brind's Battery (No. 1) to the right had been at work ever since the morning of the 8th Sept., pounding away on the Moree Bastion, and dropping long shots into the Cashmere Gateway; two days after the Ludlow Castle Batteries (No. 2) opened; the next morning the Koosiah Bagh (No. 4) was unmasked, and with that of the Custom House (No. 3) took up the game, and now some fifty pieces of artillery were in full play on the doomed city. Day and night the pounding went on. The Moree Bastion was soon silenced, and the line of parapet which sheltered the sharpshooters between it and the Cashmere Bastion was fast disappearing. The Cashmere Bastion itself was silenced in ten minutes after the Ludlow Batteries had opened on it, and the massive stonework, only a few months before restored and strengthened by the English Government for the protection or beautification of the City of the Mogul, soon began to crumble away under the play of English 24-pounders. The Water Bastion fared almost worse, the fire from the heavy guns at the Custom House at 160 yards range played with fearful effect, the guns were dismounted and smashed and the breach opened while under the play of Tombs' mortars, the curtain between was literally stripped."

These advantages were not gained without considerable loss. The batteries were subject to enfilade from the village of Kissen Gunge, on the far side of the canal; it was therefore imperative that the assault should be delivered as soon as possible. This was fixed for

the morning of September 14th. The arrangements were thus laid down. There were to be four columns of attack, with a reserve. The first was to storm the breach in the Kashmere Bastion, the second that in the Water Bastion, the third to enter by the Kashmere Gate when blown in by the Engineers, and the fourth on the extreme right to clear the Kissen Gunge suburb, and then enter by the Lahore Gate.

The columns were thus composed—

No. 1—under General Nicholson, 1,000 men, with Lieutenants Lang and Medley, of the Engineers, and Bingham, Assistant-Engineer.

No. 2—under Brigadier-General Jones, 61st Regiment, 800 men, with Lieutenants Greathed, Hovenden, and Pemberton, of the Engineers.

No. 3—under Colonel Campbell, 52nd Light Infantry, 1,000 men, with Lieutenants Home, Salkeld, and Tandy, of the Engineers.

No. 4—under Major Reid, commanding Sirmoor Battalion, 780 men, with Lieutenants Maunsell and Tennant, of the Engineers.

Reserve under Brigadier-General Longfield, 1,200 men, with Lieutenants Ward and Thackeray, of the Engineers.

These columns had all fallen in by three o'clock on the morning of September 14th, at the place of rendezvous, Ludlow Castle. During the night the enemy had filled up the breaches with sandbags. It became, therefore, necessary to clear these away by fire from the batteries before any assault could be delivered; the guns opened accordingly, and continued playing till daybreak. It had been arranged that the 60th Rifles, under Colonel Jones, should move forward first of all, and, under cover of the trees and brushwood, creep as close to the ramparts as possible, and from thence keep down the fire of the defenders while the columns advanced. The cheers of this party, when they began to move, were to be the signal for the guns to cease firing.

The main interest as an Engineer operation centred in the blowing in of the Kashmere Gate, for the entry of the third column, to which, as has been said, Lieutenants Home, Salkeld, and Tandy were attached. The duty devolved on the two former, assisted by sundry Non-commissioned Officers of the Bengal Sappers. Cooper gives a very vivid description of the incident, commencing thus—

"At the head of the third column stood the gallant exploding party, consisting of Lieuts. Salkeld and Home, of the Engineers, Serjeants Carmichael, Burgess, and Smith, of the Bengal Sappers, Bugler Hawthorn, of the 52nd L. I." (who accompanied the party to sound

the advance when the gate was blown in), "and eight native Sappers, under Havildar Madhoo, to carry the bags of powder. At the edge of the cover" (the brushwood which stretched to within a short distance of the ramparts), "the powder bags had been transferred to the European soldiers. Here stood the heroic little band, forming a forlorn hope, feeling themselves doomed to almost certain death, waiting in almost agonized suspense for the appointed signal. It came, the firing suddenly ceased, the cheer of the Rifles rang through the air, out moved Home with four soldiers, each carrying a bag of powder on his head, close behind him came Salkeld, portfire in hand with four more soldiers similarly laden, while a short distance behind came the storming party, 150 strong, followed up by the main body of the column in rear."

There was a gateway outside the ditch, then the drawbridge, which was so much shattered as to be difficult to cross, and behind it the main gate with a wicket, which at the time was standing open. Home and his party passed over what was left of the bridge, deposited the powder bags against the gate, and dropped unhurt into the ditch, only two or three shots having been fired at them. By the time that Salkeld with his party arrived, the garrison had recovered from their panic, and perceiving how few the assailants were, and what their object was, poured a deadly volley upon the little group at a distance of only ten feet. Salkeld had by this time laid the other four bags, and was about to apply the portfire when he was shot through the arm and leg. He then handed the portfire to Serjeant Burgess, bidding him light the fuze. Burgess was shot dead before he could obey the order, on which Serjeant Carmichael dashed forward, seized the portfire, and succeeded in igniting the train. The next instant he, too, fell mortally wounded. On this, Serjeant Smith pushed forward, but finding the train already ignited dropped into the ditch, where the bugler had by this time conveyed the wounded Salkeld. Here the party crouched for a few most anxious moments, awaiting the result. This soon declared itself. A terrific explosion was followed by the crashing in of the massive gate, which was shattered to pieces, the gallant little bugler Hawthorne sounded the advance, the stormers with a ringing cheer dashed in, and the Kashmere Gate with the Main Guard behind it was secured.

This now celebrated spot is hallowed by the memory of the heroic deed of September 14th, 1857; and a monument to those who fell on the occasion has been erected on the spot by Lord Napier of Magdala. It was indeed worthy of record. The advance was one to almost certain death. The crowd of mutinous soldiery within could hardly fail to shoot down those who were attempting so daring a deed, and it was a matter of bare justice that the survivors should receive the coveted decoration of the

Victoria Cross. Salkeld lingered for two days and then died of his wounds, whilst Home, who had passed unscathed through the ordeal, most unfortunately lost his life a very short time afterwards by an accident, whilst blowing up the fort of Malagurh.

The men of the first column, commanded by General Nicholson, had dashed at the breach in the face of the Kashmere Bastion, which they carried with ease in spite of a galling fire kept up on them from St. James's Church and the adjoining Kutcherry. At the same time the second column had stormed the breach in the left face of the Water Bastion. This was not effected without difficulty, as nearly all the scaling ladders were broken before they could be fixed. Then the Kutcherry and church were cleared, and the two columns united under the command of Nicholson for further action. Pushing forward they swept the enemy from the walls as far as the Kabul Gate, which they secured and opened.

This success was rapidly followed up, and the column advanced to the vicinity of Lahore Gate, when they received a check. The Sepoys swarmed into the adjacent houses, and now began to pour a most destructive fire upon the mass below, which was brought up by a breastwork, behind which were two heavy field pieces. Nicholson directed a charge to be made by the 1st Bengal Fusiliers, who advanced with a rush, and captured one of the guns. The terrible fire from the adjacent houses was meanwhile kept up, and the troops, crowded as they were in a narrow lane, suffered fearfully. Nicholson was anxious to secure the second gun, and waving his sword headed a party to attempt its seizure. At this moment he was struck in the chest by a bullet, and fell, mortally wounded. This loss was fatal to further progress at the time, and the columns retired on the Kabul Gate.

Meanwhile the third column, after having secured the Main Guard and cleared the Water Bastion and Kutcherry of some of the enemy who still remained there, advanced through the Begum's Gardens (now the Queen's Gardens), and the Chandee Chowk, towards the Jumna Musjid, the gate of which they found bricked up—

"A difficulty now arose; there were neither powder bags nor guns to force it open. The enemy were also lining the houses and maintaining a very heavy musketry fire. In spite of these untoward circumstances the column held its own, momentarily expecting aid to arrive. But it came not. Our failure at the Lahore Gate prevented this, and thus without help for it the column was obliged to fall back on the Begum's Gardens and join the reserve."—(Bolton's "Siege of Delhi," p. 278.)

Before this point had been reached, Lieutenant Tandy, the only remaining Engineer officer attached to the column, had been killed.

"Nothing can surpass the numerous acts of personal gallantry displayed on this occasion. Almost every man seemed a host in himself. But conspicuously and pre-eminently brave was poor Tandy, who was killed on the spot."—(Bolton, p. 274.)

The fourth column, after having failed in driving the enemy out of the suburb of Kissen Gunge, succeeded in entering the city through the Kabul Gate as soon as it had been secured by Nicholson's force.

Thus ended the memorable 14th September; the British were within the walls and held all the northern part of the city, but it was only after six more days' severe fighting that it was entirely cleared of the mutineers. On the morning of September 21st a royal salute at sunrise proclaimed that Delhi was once more ours, and that the Queen's sway had superseded that of the puppet Emperor.

The casualties in the Engineers on the 14th had been severe. Lieutenants Salkeld and Tandy were killed. Lieutenants Medley, Greathed, Hovenden, Pemberton and Maunsell wounded. In addition to the above the following losses were sustained during the siege:—Lieutenant W. Jones killed, and Lieutenants Gulliver, Warrand, Chesney, Brownlow, Murray, Champain, Carnegie, and Forbes wounded. Lieutenants Geneste and Fulford died shortly afterwards from the effects of exposure during the operations.

Colonel Baird Smith made the following report on the deeds of the Engineers under his command on the eventful 14th September:—

"I feel assured that a simple statement of the facts of this devoted and glorious deed will suffice to stamp it as one of the noblest on record in military history. Its perfect success contributed most materially to the brilliant results of the day, and Lieutenants Home and Salkeld, with their gallant subordinates, European and native, will, I doubt not, receive the reward which valour before the enemy, so distinguished as theirs, has entitled them to. Lieutenant Medley (wounded) was appointed to guide the 1st Division of the 1st Column to the main breach, which he had personally examined the night before, and, though shot through the arm, continued with the column till it was established in the Cabul Gate. Lieutenant Lang was appointed to similar duties with the 2nd Division, and both officers have earned my best thanks by the gallant and efficient manner in which they did their work. Lieutenant Hovenden (wounded) conducted the ladder party of the 2nd column, and here, as on all occasions, showed his intelligence and gallantry, which have made his services so valuable during the siege."

When the various reports reached Calcutta a special despatch was drawn up, in which the Engineers are thus referred to:—

"To Lieut.-Colonel Baird Smith, for the able and successful conduct of the siege operations, under the discouragement of sickness and pain,

the best thanks of the Governor-General in Council are eminently due. This distinguished officer was admirably seconded by Captain A. Taylor, and the officers and men of the Engineer Brigade. . . . . Where so much has been done to command admiration it is difficult fairly to select acts for particular notice. But the Governor-General in Council feels that no injustice will be done to any man if he offers a tribute of admiration and thanks to the brave soldiers who, under Lieutenants Home and Salkeld, accomplished the desperate task of blowing open the Cashmere Gate."

Before leaving the subject it must be recorded that Lieutenant Thackeray gained the Victoria Cross for an act of gallantry, which is thus described in the official award:—

"For cool intrepidity and characteristic daring, in extinguishing a fire in the Delhi Magazine, on September 16th, 1857, under a close and heavy musketry fire from the enemy, at the imminent risk of his life from the explosion of combustible stores in the shed in which the fire occurred."

The Meerut outbreak, and the raising of the standard of rebellion in Delhi, led naturally to corresponding action in most of the great stations; and the European troops at those places found themselves called on suddenly to withstand the attack of the Sepoys who had formed the main portion of their respective garrisons.

This was especially the case at Lucknow, where, after the desertion of the mutineers, Sir Henry Lawrence found himself in the month of June, 1857, with a garrison not amounting in all to more than 2,000 men, of whom less than 700 were Europeans. The latter comprised rather over 500 officers and men of Her Majesty's 32nd Regiment, under the command of Lieutenant-Colonel Inglis, a company of Artillery, and a few staff and departmental officers. The remainder of the slender force was composed of native regiments, cavalry and infantry, with some artillery.

The Residency of Lucknow occupied a space of about 600 yards by 500, between the town and the River Goomtie, and was surrounded on all sides by buildings in the hands of the mutineers. Besides this site the Europeans held a detached outpost called the Muchee Bowan, about a mile to the east of the Residency and close to the river. This Lawrence strongly desired to maintain, as it gave him much command over the neighbouring district. Major Anderson was at the time the Chief Engineer, and under him were Captain Fulton, Lieutenants Anderson, Hutchinson, and Jones. In addition to these Lieutenants Tulloch and Birch volunteered their services and acted as Assistant Engineers.

The Chief Engineer was greatly hampered in his defensive operations by the determination of Sir Henry Lawrence to spare

the mosques, and, as far as possible, the civil buildings of the town. At this time, although the city was in a state of insurrection, it was more or less passively so, and Lawrence was desirous of avoiding any measure that might precipitate active hostilities before he was in a better state of preparation. It was doubtless a choice of evils, but the result was unfortunate. As a matter of fact the siege was begun long before the garrison was ready, and, as Lieutenant Anderson stated afterwards in his report—

"The affair of Chinhut brought the enemy upon us earlier than was anticipated by any individual of our force, and our command of labour having been limited, we had to close our gates, with nothing in many places separating us from the besiegers but the width of the streets."

This report, which gives a graphic account of the Engineer details of the defence, was drawn up by Lieutenant Anderson, who had before its close succeeded to the command of the Engineer force. Major Anderson had died on August 11th, and was followed in his post by Captain Fulton. He unfortunately was killed by a round shot on September 14th, leaving Lieutenant Anderson to fill his place. The affair of Chinhut, referred to above, was a sortie made by the garrison, which ended in serious disaster, owing to the desertion of the native artillery, who had till then remained loyal, and were thoroughly trusted by their officers. At a critical moment, when the troops were being attacked, they overturned their guns, cut their traces, and passed over to the enemy. The consequence was that the remainder of the force had to retire with severe loss.

The first result of this check, which seriously diminished the slender strength of the garrison, was the decision to abandon the Muchee Bowan. Lieutenant Inglis, the Engineer at that post, received a telegraphic message to blow up the magazine, containing 200 barrels of powder and a large quantity of ball cartridge. This was successfully done on the night of July 1st, and the detachment withdrawn safely into the Residency. Anderson thus describes the measures taken for defence:—

"The Residency Compound was first protected by a line of parapet and ditch across it; a strong battery, since named the Redan, was constructed in a corner of the garden, which furnished a command over the iron bridge. A battery (called the Cawnpore) was constructed at the opposite point of our position, enfilading the Cawnpore road, and was then designed chiefly as a barrier to the approach of mutineers from Cawnpore. . . . The general line round our position was continued from battery to battery and house to house by abattis (in lanes), and by parapets and ditches or stockades."

The enemy established heavy batteries in the most suitable positions, from which they kept up a continuous fire upon the exposed buildings. The effect is thus described by Anderson :—

"A portion of the Residency was battered down, and six men were buried in the ruins. Many of the buildings were reduced to such a state as to appear to be quite untenable, but the garrison contrived to occupy nearly all; and, though the defences of the posts have been very much weakened by the continued and heavy fire, not a single one has been abandoned."

At the very beginning of this bombardment Sir Henry Lawrence was mortally wounded, and after lingering for a short time in great agony died, leaving the command to Lieutenant-Colonel Inglis, by whom it was maintained until the arrival of the first relief under Outram and Havelock. The mutineers, finding that they could not carry their point by battering, determined to try the effect of mining, and ran numerous galleries in the direction of the works. They were, however, very unskilful, and the result of their efforts was small compared with the time and labour expended. There had been discussions within the Residency as to the advisability of mining on the part of the garrison, but the Chief Engineer was averse from taking the initiative in this branch of warfare, as he feared that it would be promptly followed by the enemy, who had a practically unlimited command both of labour and material. Now, however, that the besiegers had of their own accord adopted the system, he directed a countermining advance to be begun. On this point Anderson remarks :—

"On August 5th, we foiled a mine of the enemy's against the guard house at the Cawnpore battery, and since then, up to the arrival of the relieving force, we have been incessantly employed in mining and countermining. We have generally worked into their galleries, and after having frightened the miners away have destroyed them, or in some cases we have blown in their galleries by charging and firing our own. I need hardly add that this was a service of danger. Two of our mines for directly offensive objects require separate notice; the one at Sago's to the enemy's guard room, which we blew down, with a loss to them of, it is supposed, between twenty and thirty men; the second, to Johannes' house, in which we destroyed above eighty of the enemy. The explosion was followed by a sortie to cover the demolition of the remainder of the house and one adjoining, which object was effectually accomplished, and relieved us from the destructive fire of many of the enemy's best marksmen."

Whilst this desperate and tenacious defence was being carried on by the little garrison, daily diminishing as it was through casualties and sickness, every effort was being made to assemble a force for

its relief. This, however, was a matter of no small difficulty at a time when the few European troops that were sparsely scattered over the country had as much as they could do to hold their own. Still, the gallant Havelock made the effort, and started with a small body, with the hope of fighting his way into Lucknow. After numerous struggles with the enemy, and when he had approached sufficiently near to effect a communication with the beleaguered garrison, he was compelled to fall back and await further reinforcements before he could make the final dash.

In the correspondence which he had effected by means of a spy, he informed the defenders that he hoped to reach the spot in about five or six days, and proposed to notify his arrival in the vicinity by the discharge of two rockets, at a given hour in the night. It may be imagined how anxiously the promised signal was looked for; but night after night passed by, and no rockets were seen. It was not till some time later, when his army had been strengthened by the arrival of Outram, that the column was able to force its way into the Residency on September 25th.

This welcome relief, although insufficient to allow of the garrison being safely withdrawn, added greatly to their powers of resistance, and enabled them to hold their own with comparative facility until the force under Sir Colin Campbell could finally extricate them. During the second portion of the defence, viz., from September 25th to December 18th, the Engineers were reinforced by the officers who had accompanied Outram and Havelock. These were Captain Crommelin, who, on arrival within the Residency, assumed the functions of Chief Engineer, previously held by Lieutenant Anderson, Lieutenants Hutchinson, Russell, and Limond. Captain Crommelin had been wounded on the day of entry, and whilst he was incapacitated for duty, Colonel R. Napier, Bengal Engineers, who was Military Secretary to Outram, undertook the duties of Chief Engineer in his place. Captain Oakes, Lieutenants Chalmers and Hall, acted as Assistant Engineers. The defence during this second period continued to be principally confined to mining and countermining operations. General Outram writes thus on the subject in his despatch dated November 25th:—

"I am aware of no parallel to our series of mines in modern war. Twenty-one shafts, aggregating 200 feet in depth, and 3,291 feet of gallery, have been executed. The enemy advanced twenty mines against the palaces and outposts; of these they exploded three which caused us loss of life, and two which did no injury; seven have been blown in, and out of seven others the enemy have been driven, and their galleries taken possession of by our miners, results of which the Engineer Department may well be proud."

Captain Crommelin, in his report, dated November 12th, gives the following account of his proceedings :—

"We found the soil to be generally light and sandy; still the greater portion of the galleries were run without casing. . . . . I may here mention, as an extraordinary fact, that two galleries were run respectively to lengths of 298 and 192 feet, without the aid of air tubes. In the latter the lights burnt well; but in the former the men were obliged to work in the dark, and were somewhat (though not greatly) affected by the foulness of the air. . . . . The utility of the galleries has proved most marked. On eight different occasions the enemy were heard mining towards our position. We waited patiently and quietly till their mines broke into our gallery. We then fired on them through the opening, wounding several, and in every instance we captured their galleries and tools, and then destroyed the former without using any powder. On two other occasions, when the enemy were heard approaching, we commenced running out short branches from our own galleries, in order to lodge a charge for blowing in those of the enemy. Their miners, in both enclosures, abandoned their galleries. Our success so alarmed the enemy that they have latterly been afraid to approach near our position, and have twice exploded charges at ridiculously long distances from the works that they intended to destroy; indeed, nearer to their own buildings than to ours. I may add, that since we commenced our listening galleries the enemy have failed to do us any injury with their mines, and our exposed front has remained perfectly secure."

The long struggle ended on the arrival of Sir Colin Campbell, with an adequate relieving force. He fought his way through the enemy's lines, and defeated them signally. Having opened up communication with the defenders of the Residency, the whole garrison, with its sick and wounded, its women and children, was safely withdrawn, and the city abandoned for the time being to the Sepoys. Lieutenant W. O. Lennox, R.E., acted as Commanding Engineer, on Sir Colin's staff, in place of Colonel Goodwyn, B.E., who had fallen sick; Lieutenant G. E. Watson, B.E., was Brigade-Major to the Engineers; and Lieutenant P. Stewart, B.E., Superintendent of Electric Telegraphs.

The 23rd Company Royal Engineers was present under Lieutenants Malcolm and Pritchard, as was the C Company Madras Sappers under Lieutenants Raynsford, Burton, and Scott. Lieutenant Lang, B.E., was also with the force. He and Lieutenant Burton were the first two officers to reach the top of the Martinière, on which they planted our flag on November 14th.

The following extracts from despatches refer to the services of the Engineers, in this notable defence :—

"Capt. Fulton, of the Engineers, who was struck by a round shot, had up to the time of his early and lamented death, afforded me the

most invaluable aid; he was indeed indefatigable. Major Anderson, the Chief Engineer, though from the commencement of the siege incapable of physical exertion from the effects of the disease under which he eventually sank, merited my warm acknowledgments for his able counsel. —(Col. J. Inglis' despatch, dated Lucknow, Sept. 26th, 1857.)

"Capt. Crommelin, Commanding the Engineer Department, has had to undertake very important duties of a novel and difficult nature, without trained sappers, and without any establishment of trained subordinates, and with a very small staff. Under these disadvantages combined with the very serious one of ill health, Capt. Crommelin, aided by the Executive Department, converted the open arcaded walls of the palace into secure barracks, and has kept aloof the enemy's miners. To Capt. Crommelin, to his gallant and energetic second in command, Lieut. Hutchinson, to Lieuts. Russell and Limond, and the officers and men recommended by Capt. Crommelin, I am very greatly indebted." —(Genl. Outram's despatch, Nov. 25th, 1857).

Whilst these brilliant deeds were being enacted by the Engineers of the Indian establishment, strong reinforcements of Royal Engineers were pouring into the country. Most fortunately for our arms, an expedition was at the time on its way to China, to carry on the war which had broken out in that country. A portion of this force, on reaching Singapore, was diverted to India, and amongst others the 23rd Company Royal Engineers, under Captain A. J. Clarke, with Lieutenants Lennox, Malcolm, Pritchard, and Harrison. This Company landed at Calcutta on August 11th, 1857, and as we have seen took part in the relief of Lucknow.

The 4th Company, under Major Nicholson, with Lieutenants Scratchley, Wynne, Swetenham, and Keith; the 11th Company, under Captain Cumberland, with Lieutenants Maquay, Walker, and Paterson, and the 21st Company under Captain Fenwick, with Lieutenants Edwards, Gossett, Webber, and Festing, all arrived in November, the two former being landed at Calcutta, and the latter at Bombay.

Lieutenant-Colonel Harness, then Commanding Royal Engineer at Malta, received telegraphic instructions at the same time to proceed to India, to take command of the Royal Engineers, whilst Sir Robert Napier held the post of Chief Engineer over the amalgamated force. Captains Cox, Neville, and Lieutenant Beaumont were also ordered to the country unattached to any Company, making the number of Royal Engineers twenty-four officers and four Companies.

The 4th and 23rd Companies joined the force which Sir Colin Campbell was collecting for the recapture of Lucknow, and served throughout that operation.

When the relief of Lucknow had been effected, Sir Colin

Campbell left a force of 4,000 men under General Outram to hold the Alumbagh, a fortified post about four miles to the north of Lucknow, with instructions to form intrenchments and hold the point until the army could return sufficiently strengthened to capture the city. The Engineers with Outram were Lieutenants G. Hutchinson and C. N. Judge of the Bengal Engineers, and Lieutenants C. Scott and Burton of the Madras Engineers, with the C Company of Madras Sappers.

Outram maintained his ground, and converted the position, which was of considerable extent, into a strongly fortified camp. He held it against numerous attacks from November, 1857, to March, 1858, when the Commander-in-Chief returned.

The city of Lucknow being upwards of twenty miles in circumference, it was utterly impossible to attempt an investment or a siege under ordinary conditions. Before detailing the operations actually carried out, it may be well to describe the position roughly.

The town is bounded on the north by the Goomtie, and on the east by a canal which runs southward from that river. About half way between the canal and the Residency stands the King's Palace, the Kaiser Bagh. This was the citadel of the defence, and was covered by three lines. The first was a flanked rampart on the inner side of the canal, which formed a wet ditch to it. The second, with a circular trace, enclosed a large building called the Mess House, and another called the Motee Mahul; whilst the third consisted of a line of rampart to the north of the citadel. The first and second lines rested on the river to their left, and terminated on the right in the town itself, where it was impossible for an enemy to advance or turn them. Indeed, the only possible point of attack was from the east, supported by a corresponding advance on the other side of the river to take the lines in reverse. In front of the canal, and about a mile from it, was an extensive block of buildings called La Martinière, about five miles from the Alumbagh.

In preparation for the attack, an Engineer Brigade was formed, consisting of the 4th and 23rd Companies Royal Engineers, the C Company of Madras Sappers and Miners, a Company of Bengal Sappers, and some Punjabees and Sikhs, who acted as pioneers.

The officers of this brigade were Colonel R. Napier, Brigadier in command; Lieutenant-Colonel Harness, commanding the Royal Engineers; Major Nicholson, commanding the 4th Company; Captain Clerke, commanding the 23rd Company; Captain Cox, Adjutant; Captain Lennox; Lieutenants Scratchley, Malcolm, Pritchard, Wynne, Swetenham, Keith, and Harrison. Captain Taylor, B.E., commanding the Indian force; Lieutenant

Gulliver, commanding the Punjab Pioneers; Lieutenant Maunsell, commanding the Bengal Sappers; Lieutenant Champain, Adjutant to the Bengal Sappers; Lieutenants Tennant, Hovenden, Brownlow, Young, Hutchinson, Watson, Pemberton, Murray, McNeill, Warde; Second Lieutenants Fulford, Carnegie, Thackeray, Forbes, and Judge, all of the Bengal Engineers; Lieutenant Scott, commanding Madras Sappers, with Second Lieutenant Burton, M.E.

On the night of March 4th two cask bridges were thrown across the Goomtie, under the direction of Major Nicholson. This was a very troublesome and difficult operation, but was successfully completed with its approaches by 4 p.m. on the 5th. Outram's force crossed by these bridges on the 6th, the remainder of the army being posted at Dilkhusha, about 1,000 yards in rear of La Martinière. On the 7th the Sepoys made a sharp attack on Outram, but were repulsed without difficulty, and retired within their lines, leaving him free to push forward. Major Nicholson, who was his Commanding Royal Engineer, has the following entries in his private diary of the war:—

"Up at 5 a.m., and with Sir James Outram and Hovenden and Wynne rode down the Kukrail towards the Goomtie. Got close to the end of the enemy's lines, and from a position close to the Kukrail we found we could see into the rear of these works. Poor creatures! they have not a grain of sense; they have thrown up the most tremendous works, and they are absolutely useless. ... March 9th. Sir Colin took the Martinière in the morning. 60 R.E. and 50 Punjaubs, under Swetenham and Nuthall, took the Chutur Kotee, threw up a mortar battery on the left of the Padsha Bagh. Corporal Trimble showed much courage in the Padsha Bagh, and Garret was wounded, also poor Swetenham. .... March 10th. This morning we were engaged in throwing up a six-gun battery in front of the Padsha Bagh, and at break of day it opened on the Kaiser Bagh. Four guns were put into a Pandy battery outside the Padsha Bagh last night, and did excellent service on their own works."

On the evening of the 9th Sir Colin Campbell, who had secured the Martinière in the morning, was able to advance on the canal line, which had been enfiladed and taken in reverse by the batteries already established by Outram's Engineers. He secured the line without loss. The forward movement was now continued, the houses and palaces being used as an approach. In this way the second line was turned on the left. Batteries were thrown up to breach a large block of palaces called the Begum Kotee on the right, which was then stormed and carried.

"From thenceforward the Chief Engineer pushed his approach with the greatest judgment through the enclosures by the aid of the Sappers and heavy guns, the troops immediately occupying the ground as he

advanced, and the mortars being moved from one position to another as ground was won on which they could be placed."—(Sir C. Campbell's despatch.)

At length the third line was turned, and the Kaiser Bagh entered.

"Supports were quickly thrown in, and all the well-known ground of former defence and attack, the Mess House, the Tara Kotee, the Motee Mehal, and the Chutar Munzil were rapidly occupied by the troops, while the Engineers devoted their attention to securing the position towards the south and west. . . . . This is not the place for a description of the various buildings successively sapped into or stormed, suffice it to say that they formed a range of massive palaces and walled courts of vast extent. . . . . Every outlet had been covered by a work, and on every side were prepared barricades and loopholed parapets. . . . . Hence the absolute necessity for holding the troops in hand till at each successive move forward the Engineers reported to me that all which could be effected by Artillery and the Sappers had been done before the troops were led to the assault."—(*Ibid.*)

The force under Outram, which had been advanced on the other side of the Goomtie, now recrossed on a bridge of casks and pushed forward to capture the Residency. This was the last move ; the enemy abandoned the defence, and to use the words of Sir Colin's despatch, "In short the city was ours." Still there were detached posts held by desperate bands of natives, and it was not till the 21st that all fighting ceased. The operations had therefore from first to last occupied sixteen days.

It would be difficult for me to give an adequate idea of the zeal and activity displayed by the Chief Engineer, Brigadier Napier, Bengal Engineers. Many of the operations depended on his proper appreciation of the obstructions to be overcome, and the means at his disposal for that purpose. His great professional skill and thorough acquaintance with the value of his enemy have been of the greatest service, and I recommend him most cordially to your Lordship's protection. I am under very great obligations to him.—(Campbell's despatch.)

The 4th Company Royal Engineers, under Nicholson, crossed the Goomtie with Outram, and served with that force throughout the operations. Outram in his despatch says:—

. . . . "Major Nicholson, R.E., evinced the most indefatigable industry in the construction of the heavy batteries which fell to his department to execute, and in choosing sites, from which he was constantly exposed to a very heavy fire . . . . Major Nicholson, R.E., highly applauds the energy displayed by the officers of that department., viz., Lieuts. Malcolm, Wynne, Swetenham, Keith, R.E., and Lieuts. Waters, Tennant, Hovenden, and Nuthall, B.E."

The following Engineers were named by Brigadier Napier, "who are deemed deserving of honourable mention" :—

Royal Engineers.

Colonel Harness, Commanding Royal Engineer; Major Nicholson, Captains Lennox and Clerke, Lieutenants Beaumont, Scratchley and Wynne.

Bengal Engineers.

Major Taylor, Commanding Engineer; Captain G. Hutchinson, Lieutenants Greathed, Gulliver, Maunsell, Medley, Hovenden, Long, Humphrey, Champain, Pemberton, and Carnegie.

Lieutenant Scott, Madras Engineers; and Acting Engineers Ensign Ogilvy, and Lieutenant A. Tulloch.

Of these Lieutenant Wynne, Royal Engineers, was recommended for the Victoria Cross, for the manner in which he removed a breastwork from the Iron Bridge "under a heavy fire."

This service deserves a somewhat more detailed description than is given in the extract as quoted. A barricade had been thrown across the Iron Bridge for the protection of Outram's force in its operations on the north side of the river. Orders were received to remove this obstacle, so as to admit of the passage of troops and artillery across the bridge. The service was one of the most imminent danger. The barricade was under the close fire of the enemy, and being broad daylight it seemed impossible that the work could be carried out without the certainty of being shot. Lieutenant Wynne and Serjeant Paul of the 4th Company Royal Engineers, volunteered to undertake the removal. They advanced under cover of the parapet of the bridge till they reached the barricade, one on either side. They then commenced carefully removing the sandbags one at a time and passed them to a line of men extended to receive them. After a few had been thus abstracted the enemy discovered what was going on, and opened a heavy fire of musketry on them. Undaunted by this Wynne and Paul continued steadily at work, crouching behind the ever diminishing shelter, until at length they were lying on the ground; nor did they quit the spot until all had been removed except the lowest tier. This of course could be cleared away without difficulty when the advance was made. Both returned unharmed from the storm of bullets that had been rained on them. Unfortunately, poor Wynne did not live to receive any reward, as he died shortly afterwards at Lucknow of apoplexy, brought on by exposure during the campaign.

During the operations a sad casualty occurred. At the Jumna Musjid there were nine cartloads of powder found in a courtyard which Outram directed to be destroyed.

As there was a well on the spot it was considered that the best

method of disposing of the powder, which was in tin cases, would be to throw them down into the water. A line of men was formed, and the cases passed from hand to hand as rapidly as possible. By some fatality one of them exploded in falling. A flame of fire flashed up, and ignited case after case all along the line till the carts were reached, when they also exploded. Captain Clerke, R.E., and Lieutenant Brownlow, B.E., who were superintending the operation, were both so frightfully burnt and mutilated, that they died after enduring the most fearful agony. With one exception every man of those forming the party, to the number of twenty-two, was killed. Strangely enough, the only one to escape was he who was throwing the cases down the well. He was rendered senseless but eventually recovered.

On the receipt of the despatches in Calcutta, the Governor-General issued an Order, dated April 5th, 1858, of which the following is an extract:—

"The Governor-General entirely concurs with his Excellency, the Commander-in-Chief, in prominently recognizing the great skill and ability of Brigadier Napier, who commanded the Engineers of Her Majesty's and the East India Company's Services, forming part of the force. Brigadier Napier is especially entitled to the thanks of the Governor-General, and to him, to Colonel Harness, Commanding the Royal Engineers, and to the several officers under them of both the services, his Lordship's grateful acknowledgments are offered."

Brigadier-General Franks, with the Juanpore Field Force, had joined the army before Lucknow, on March 5th, after a march of 150 miles. During this, Lieutenant Innes, B.E., who was with the column, performed an act of gallantry for which he received the V.C. The incident is thus narrated by General Franks:—

"I have already mentioned his distinguished conduct at the attack on Dhowrara" (he had been severely wounded whilst endeavouring to burst open the door of a house, within which some mutineers had barricaded themselves). "It is now his due to relate that at the action of Sultanpore, far in advance of the leading skirmishers, he was the first to secure a gun which the enemy was abandoning. Retiring from this they rallied round another gun further back, from which the shot would in another instant have played through our advancing columns, when Lieutenant Innes rode up, unsupported, shot the gunner about to apply the match, and remaining undaunted at his post, the mark for a hundred matchlock men sheltered in some adjoining huts, kept the artillery men at bay until assistance reached him. For this act of gallantry, surpassed by none within my experience, it is my intention to recommend him for the honourable distinction of the V.C."

It may here be recorded that Lieutenant Prendergast, M.E., had accompanied the Malwa Field Force, in November, 1857, and

performed so many acts of gallantry whilst with them that he also received the Victoria Cross. The reason given for the award is as follows :—

"For conspicuous bravery on November 21st, 1857, at Mundisore, in saving the life of Lieut. G. Dew, 11th Lt. Dragoons, at the risk of his own, by attempting to cut down a Velaitee, who covered him (Lieut. Dew) with his piece from only a few paces to the rear. Lieut. Prendergast was wounded in this affair, by the discharge of the piece, and would probably have been cut down, had not the rebel been killed by Major Orr. He also distinguished himself by his gallantry in the actions at Ratgurh and Betwa, where he was severely wounded. Major-General Sir Hugh Rose, in forwarding his recommendation of this officer, states Lieutenant Prendergast, Madras Engineers, was specially mentioned by Brigadier, now Sir Charles Stuart, for the gallant act at Mundisore, when he was severely wounded. Secondly, he was 'specially mentioned' by me, when acting voluntarily as my Aide-de-Camp, in the action before besieging Ratgurh on the Beena river, for gallant conduct. His horse was killed on that occasion. Thirdly, at the action of 'the Betwa' he again voluntarily acted as my Aide-de-Camp, and distinguished himself by his bravery in the charge which I made with Capt. Needs, Troop H.M.'s 14th Lt. Dragoons, against the left of the so-called Peishwa's army, under Tantia Topee. He was severely wounded on that occasion."

Another brilliant episode in this war, so full of heroic incidents, was the capture of Jhansi by the Central India Field Force under Sir Hugh Rose. It was divided into two Brigades, the 1st commanded by Brigadier-General Stuart, and the 2nd by Sir Hugh Rose himself. The 21st Company, R.E., was attached to the 1st Brigade, and Captain Fenwick became its Commanding Royal Engineer. The B Company Madras Sappers and a Company of Bombay Sappers formed part of the 2nd Brigade, with Major Boileau, M.E., as its Chief Engineer.

The two Brigades each took different routes from the point of assembly at Mundisore, and having captured numerous forts in their progress united in the vicinity of Jhansi, which was invested on March 22nd. It may here be recorded that Captain G. Neville, R.E., had joined the 2nd Brigade some short time before, and was almost immediately afterwards killed by a round shot near Ratgurh on January 30th.

The city of Jhansi was surrounded by an enceinte wall from 6 to 12 feet thick, and varying in height from 18 to 30 feet, flanked by bastions, in which guns were mounted. The fort which formed the citadel was of granite, from 16 to 20 feet thick, almost impervious to artillery. It was perched on the summit of a rock, and commanded the city. The south was the only side offering

any possibility of a successful attack; there the city wall which sprang from the centre of its face ran southward, ending in a mound or mamelon, at which point it changed direction to the east, and made the circuit of the city. This mound was fortified by a strong circular bastion, with a wide and deep ditch. In order to attack the fort with success on the only vulnerable side it was necessary to capture this point, and hold the city wall.

Two batteries were established, one on the right where the mound and wall could be taken in reverse, the other on the left whence the enceinte and fort could be battered. As soon as the city wall had been breached near the mound it was decided to assault at that point, and at the same time to attempt an escalade at other places. The 1st Brigade was to storm the breach and to escalade at the Rocket Bastion on its left. The 2nd Brigade was to escalade on the right. Lieutenant Webber, R.E., led the escalading party on the left, and Lieutenant Gossett, R.E., the stormers of the breach. The attack on the right was in two columns, one led by Lieutenants Meiklejohn and Dick of the Bombay Engineers, and the other by Lieutenant Bonus, Bombay Engineers, and Lieutenant Fox, Madras Sappers and Miners.

The breach was carried without much difficulty, as a heavy fire had been kept up on it throughout the night; but it was so strongly stockaded that it would not have been readily forced had the garrison made a determined resistance. The left escalading column led by Webber met with more opposition. The wall was here 27 feet high, and loopholed. The enemy had prepared large masses of stone which they pushed over, breaking many rungs of the ladders; they also fired rockets through the loopholes. The two men first in were Lieutenant Dartnell, 86th Regiment, and Lieutenant Webber. The former was severely wounded before Webber could come to his assistance. After a sharp struggle a footing was gained, and the enemy driven from the bastion.

Of the two right columns, that on the extreme right found the wall about 25 feet high, whilst in the part attacked by the other it was 30 feet. Only three ladders could be raised at each point. Lieutenant Meiklejohn was the first up the ladders with his party, but was dragged over the wall and literally *cut to pieces*. Lieutenant Dick was also first up with his party, and on arriving at the top was shot through the head, falling dead at the foot of the ladder. In the other column Lieutenants Bonus and Fox were both severely wounded. The assault at this side would have failed entirely but for the fact that the stormers at the breach pushed their way along the ramparts till they reached the spot and drove away the defenders.

There was a good deal of street fighting for two days, after

which the enemy abandoned the fort, leaving Jhansi in the possession of its assailants.

Sir Hugh Rose wrote in his despatch :—

It will be a gratification to the relatives of Lieuts. Meiklejohn and Dick, of the Bombay Engineers, to know that these two young men had gained my esteem by the intelligence and coolness which they evinced as Engineer officers during the siege. I should have recommended both for promotion, if they had not died in their country's cause, for conspicuous gallantry in leading the way up two scaling ladders."

Corporal Michael Sleavon, 21st Company, R.E., gained the Victoria Cross during the street fighting on the day of the assault, which is thus recorded in the award :—

"For determined bravery at the attack of the Fort of Jhansi, on April 3rd, 1858, in maintaining his position at the head of a sap, and continuing the work under a heavy fire with a cool and steady determination worthy of the highest praise."

The officers of Engineers who took part in this brilliant little siege were :—

Royal Engineers—Captain Fenwick; Lieutenants Edwards, Gossett, Webber, and Festing.

Indian Engineers—Major Boileau; Lieutenants Prendergast, Meiklejohn, Dick, Bonus, Goodfellow, and Gordon.

It would be impossible within the limits of these volumes to give any detailed account of the mass of work done by the Engineers, both Royal and Indian, during the remainder of the war. The marching from place to place was incessant, and the sufferings of officers and men from the climate terribly severe. It may suffice as a sample of the general nature of the campaign to conclude with a couple of extracts from the journal of the Royal Engineer Companies. Those selected are for the month from April 14th to May 14th, 1858, showing the operations carried out by the 4th Company under Major Nicholson, R.E., dated at Nuggur, May 14th, 1858; and by 23rd Company under Major Lennox, dated at Bareilly on the same day.

4TH COMPANY'S JOURNAL.

"Sapper Henry Grant, 4th Co., R.E., died in Hospital at Lucknow, on April 20th, 1858.—*April 14th.* Force under Sir H. Grant, with Sappers attached, marched from Barree to Barrassy, about 12 miles.—*April 15th.* Marched to Mohamedabad; here the Sappers were engaged during the day in destroying the house of a chief rebel called Nawab Ali Khan.—*April 16th.* Marched 10 miles to Bilhoor.—*April 17th.*

With Horse Artillery and Cavalry reconnoitred a ford over the Choukee,* about 4 miles from Camp, with a view to crossing it to attack the Begum; the next day, however, we heard that as usual the Pandies had bolted, so it was not considered necessary to cross it so high up at any rate.—*April* 18*th*. The force marched 6 miles to Tirway.—*April* 19*th*. Marched 8 miles to Ramnuggur.—*April* 20*th*. Sappers employed destroying by fire and powder the house and mud fort of the Nawab of Ramnuggur.—*April* 21*st*. Marched 9 miles to Mussoolee.—*April* 22*nd*. Marched 10 miles to Nawabgunge, visiting, with a portion of the force, a small fort in the very centre of a thick jungle. To destroy this place, the Madras Sappers were sent on the following day.—*April* 23*rd*. I rode to Lucknow with Sir Hope Grant, leaving the force at Nawabgunge. On arriving in Lucknow, I found that Lt. Swetenham was detached to Jellalabad with 7 of the 4th Co. and 100 of the Delhi Pioneers, with orders to destroy one face of it.—*April* 25*th*. Lt. Scratchley marched the detachment into Lucknow, having come in two marches from Nawabgunge.—*April* 26*th*. Lt. Swetenham rejoined with his men from Jellalabad, having completed his work; received orders to march on another expedition with Sir Hope Grant.—*April* 28*th*. Sir H. Grant's column marched to Alumbagh, Lt. Wynne, with 30 men, joined it.—*April* 29*th*. The column marched to Bunnee Bridge, and I rode out in the evening and joined them there.—*April* 30*th*. Diverged from Lucknow and Cawnpore road, and camped at Kanta.—*May* 2*nd*. Marched 9 miles to Pownvah.—*May* 3*rd*. Sappers employed in destroying the fort, burning the buildings in it, making breaches in the mud parapets, and burning also a most stubborn looking abattis.—*May* 4*th*. Marched 7 miles to Morowa.—*May* 5*th*. Made an expedition to a small fort about 3 miles from Morowa, in which it was said that guns were concealed; two were produced. We then set fire to the fort and returned to camp.—*May* 6*th*. Marched 6 miles to Dirikpalgung. The heat begins to get intense, and it is dangerous to leave one's tent during the heat of the day.—*May* 7*th*. Marched 6 miles to Pathan; Sappers employed in destroying a fort.—*May* 8*th*. Sappers completed work of destruction commenced yesterday.—*May* 9*th*. Marched about 7 miles to Nuggur; 2 or 3 men die of sunstroke every day; as yet no Sappers have died.—*May* 10*th*. Marched to Downdhizakhara, the property of a rebel called Ram Bukseh, the man who smoked out of a temple some of the unfortunate people who had escaped from Cawnpore, and then sent them back there to be murdered.—*May* 11*th*. The R.E. Sappers started early in the morning under escort to destroy the temple, and the Madras Sappers were engaged in spoiling the jungle fort, whilst others were engaged in burning the town.—*May* 17*th*. Hearing the enemy were in position near Nuggur with guns and cavalry, the General

* This journal is in the writing of a man who apparently seems not very sure of the names of the places recorded. It is copied from the journals of the officers, and probably some of the names are erroneously spelt in transcribing them.

ordered the column to march at 12 at night, hoping thus to come up with the enemy by daylight; but so much confusion took place in starting that he was not able to get further than Nuggur. However, he found that the enemy were so close that he had no alternative than to attack them, so the baggage was packed up and massed together under a guard at 3 p.m., and the force started to attack the rebels. But we had not daylight enough, and though we drove them before us in every direction, and killed about 200 of them and took two guns, yet were we not able to dislodge them from their principal stronghold, the village of Simry; the force bivouacked on the field and returned to Nuggur the following day. During the day upwards of 50 men were struck down by sunstroke, and during the last 7 days 51 men have died out of this small force of not more than 2,300 men."

23rd Company's Journal.

"Sapper Thomas J. Clyma died at Cawnpore, on April 23rd, 1858; 2nd Corporal Joseph Wren, and Sapper Charles Reynolds, died of *coup-de-soleil*, at Bareilly, on May 5th.

"Movements of Head Quarters of the Company attached to Brig.-Genl. Walpole's force, *April 15th.*—Marched from Goresgunge to the fort Rooya, which the enemy defended, occasioning the loss of 2 officers and 16 men killed, and 5 officers and 88 men wounded. The English force was encamped about 2 miles from the fort that night. On the 16th the place was found to be abandoned by the enemy. The Engineers were employed on that day, and on the 17th, in demolishing the fort of Rooya. 18th, marched 8 miles to Bilgrawn; 19th, marched 11 miles to Sandhee; 20th, crossed the Guzra Nuddee, and marched 6 miles to Mungowa; 21st, moved to Shahabudpore, 8 miles; 22nd, intended to march only to Lissee, on the Senda Nuddee, but found the enemy in position on the other side; attacked them, and soon put them to flight; our Cavalry and Horse Artillery pursued them 5 miles to Alleegunge, where we encamped. English loss trifling. Enemy's said to be 300 to 600. 23rd, Co. R. E. assisted to make a bridge across the Ramgunga, at Biehpoonia, 3 miles from Alleegunge. Joined at Alleegunge by H.M.'s 78th and 82nd, with siege guns. On the 27th, marched from Alleegunge to Tingree, 8 miles, where we were joined by Sir Colin Campbell, accompanied by Colonels Harness, C.R.E., and Capt. Cox, Adjt. R.E., from Futtehgurh; 28th, marched to Jalalabad; 29th, to Raut, 11 miles; 30th, marched to the Gogra Nudder, at Shahjehanpoe. The enemy had abandoned it, leaving one gun. 1st May, halted; 2nd May, marched from Shahjehanpoe to Filhur, 12½ miles; 3rd May, marched 10 miles, to Futtygunge, joined by a force under Brig. Jones of Carabiniers, who succeeded to command on Gen. Penny being killed in action on April 30th. 4th May. Marched to Furreedpore; May 5th, marched towards Bareilly, which the enemy were drawn up to defend. Took 6 guns; bivouacked for the night. The R. Es. had no casualties, except from the sun, which killed two, and knocked down

four others. Encamped on the parade ground of cantonments ever since May 6th. We obtained complete possession of the city on the 7th."

There yet remains to be recorded the award of another Victoria Cross to the Engineers in this war. The recipient was Lieutenant Charles Augustus Goodfellow, Bombay Engineers,

"for gallant conduct at the attack of the Fort of Beyt, on October 6th, 1859. On that occasion a soldier of the 28th Regiment was shot under the walls of the Fort. Lieut. Goodfellow rushed under the walls under a sharp fire of matchlocks, and bore off the body of the soldier, who was then dead, but whom he at first supposed to be wounded only."

CHAPTER XXI.

The China War, 1857-1860.

Acquisition of Hong Kong—Attack on the Bogue Forts—Murder of Captain Da Costa—Death of Captain Cowper—Assault and Capture of Canton—Destruction of Forts—Capture of Namtow—Death of Captain Lambert—Expedition to the Peiho in 1859—Attempted Assault—Its Failure—Renewed Expedition to the Peiho in 1860—Composition of Force—Landing at Peytang—Land Attack on Forts—Their Capture—Advance on Pekin—Destruction of Summer Palace—Conclusion of the War.

The first contest with China, commonly known as the Opium War, took place in 1841. The Engineers accompanying that expedition were all taken from the Indian corps; the incidents of the campaign do not, therefore, enter into the scope of this history. Lieutenant Ouchterlony, of the Madras Engineers, published at the time a valuable work entitled "The Chinese War: From its commencement to the Treaty of Nanking," in which all the details of the operations may be found.

One of the results of that war was the acquisition of the island of Hong Kong, and a party of Engineers was sent to the new station to construct barracks and prepare for the accommodation of a garrison. Major Aldrich was in command, and under him were Captain E. Durnford, Lieutenant (afterwards Captain) Da Costa, Lieutenant Phillpotts, and others. Shortly afterwards Lieutenant-Colonel Phillpotts was sent to the island to assume the position of Commanding Royal Engineer.

On April 1st, 1847, Sir John Davies, Her Majesty's Plenipotentiary in China, called upon Major-General D'Aguilar, commanding the troops at Hong Kong, to proceed to Canton with a combined military and naval force, and demand reparation on the spot for repeated acts of aggression on the part of the Chinese against British subjects. It was proposed that the attack should assume the form of a *coup-de-main*, and that all guns captured should be spiked.

The garrison at Hong Kong was at the time but scanty; still the General, who entered warmly into the views of the Plenipotentiary, assembled a body of about 1,000 men, who were

embarked before night on board such of Her Majesty's ships as were at the time on the station, and which were to take part in the expedition. The Engineers who accompanied the troops were Lieutenant-Colonel Phillpotts, Major Aldrich, Captain Durnford, Lieutenants Da Costa and Phillpotts, with a detachment of thirty-five Sappers.

They started at midnight, and at 9 a.m. on the 2nd the forts of the Bocca Tigris were reached. They were carried with a rush, little or no resistance being offered, the guns were spiked and the ammunition destroyed. On the following day they gained a reach on the river protected by four large forts. The attack of these was entrusted to two separate storming columns, one led by Colonel Brereton, R.A., and the other by Major Aldrich, R.E. A heavy fire was opened on the boats as they advanced, but, on landing,

"entrances were speedily effected by means of powder bags, which were applied to the principal gates by Captain Durnford and Lieut. Da Costa."—(D'Aguilar's despatch.)

A number of other forts and batteries were also taken during the advance, and by night the troops were landed at the British factories opposite the city, having spiked no less than 879 guns.

The Chinese Commissioner now sued for terms of peace, and a suspension of hostilities was accorded till 8 a.m. on the 6th. Arrangements were meanwhile made for storming the city when that hour had arrived, should the conditions offered not have been accepted. The General records in his despatch that—

"At daybreak that morning Captain Kennedy, A.Q.M.G., and Lieut. Da Costa, R.E., penetrated during that still period of the morning to the city walls, which they ascended in two places, and ascertained that sufficient space existed thereon for making a lodgment.

The terms of the British were accepted, and the attack did not take place. Major Aldrich and Lieutenant Da Costa received special commendation for their "meritorious services."

Captain Da Costa did not long survive this act of gallantry, for at the beginning of 1849 he and an officer of the Ceylon Rifles were murdered by Chinese pirates in a village on the far side of the island of Hong Kong. Captain Da Costa had proved himself, during the few years of his service, to be a man of no ordinary abilities. He left the Royal Military Academy as the senior cadet of his term, and had been selected, owing to his attainments, for service in the Ordnance Survey. He only quitted that department to proceed to Hong Kong, where he met his untimely end.

Another sad fatality amongst the Engineers at the station

occurred in the year 1856, which was thus described in Sir M. Seymour's despatch of December 14th, 1856 :—

"On the 3rd instant a most melancholy occurrence took place. Captain Cowper, R.E., who had been detached for service at Canton, was superintending the pulling down of some Chinese houses outside the factory, when one of them suddenly fell on him, from which he sustained such extensive injuries as to cause his death in less than three hours. Captain Cowper had been of the greatest assistance in strengthening our position, and I cannot too highly express my admiration of the zeal and professional ability he displayed. Her Majesty's service has sustained a severe loss in his untimely end."

It is proposed to take up the history of our struggle with China at the point where war once more broke out in 1857, in consequence of the non-fulfilment of the treaty by which the right of entry into Canton had been accorded; coupled with the outrage on the lorcha *Arrow*. It has already been stated that troops were on their way to Hong Kong under the command of Major-General Ashburnham when the mutiny of the Sepoy army broke out at Meerut, and that those designed to act against China were intercepted at Singapore and despatched to Calcutta. The result was that the force assembled during the year 1857 at Hong Kong was principally naval, and the only operations feasible were those that could be carried out by that branch of the service, with but slender military assistance.

"Our available land force for carrying on war with the Chinese Empire consists of two generals, a very large body of officers, and about 1,000 men."—(Cooke's "China, in 1857–58.")

The Engineers at this time at Hong Kong were Colonel Lugard, C.R.E., Captain Mann, and Lieutenants Stuart, Dirom, and Trench. These were, at the end of the year, added to by the arrival of the 10th Company from Ceylon with Captain Fisher, Lieutenants Longley, Maitland, and Thaine. This reinforcement reached China in three detachments, the last of which had not arrived when it was decided once more to proceed against Canton, and by its capture compel the Chinese Government to fulfil its obligations. Captain Fisher, Lieutenant Longley, and two sections of the Company were all that took part in this operation. There was a French naval force acting in alliance with the British, and they decided upon landing a party of marines and seamen to join in the operation.

Lieutenant Stuart had some time before been placed in command of a body of Volunteer Sappers, raised in Hong Kong, which he had succeeded in training to an extent that rendered them a very valuable auxiliary to our feeble Engineer strength. He, with a

few of this company, was attached to the French brigade, under the command of Admiral de Genouilly, and served with it throughout the operations. Lieutenant-Colonel Lugard, the Commanding Royal Engineer, died on December 1st, 1857:—

"Poor Lugard was a victim to hard labour in this treacherous climate. He had much to do, and small materials to work with. He was a leader without soldiers. He had to form and fashion a corps of Engineers and Sappers and Miners out of troops of the line. His labour was incessant, and he paid the penalty which these trying Hong Kong heats almost always exact for over-exertion."—(Cooke's "China.")

After his death, Captain Mann assumed the duties of acting Commanding Royal Engineer, pending the arrival of Lieutenant-Colonel Wynne.

The plan of attack had been decided on by the allied commanders, viz., Rear-Admiral Sir M. Seymour, Naval Commander-in-Chief; Major-General C. van Straubenzee, commanding the military forces; and Rear-Admiral C. Regnault de Genouilly, commanding the French fleet. The ships of the combined squadron were to take up their positions in the Canton river, to the south of the city, and on the morning of December 28th open a bombardment on all the defences exposed to their fire. At the same time the troops were to land, and when the guns of the fleet had sufficiently overpowered those on the ramparts, an assault was to be delivered by escalade.

The British were divided into three brigades, the first composed of Marines, the second of one European and one Madras regiment, and the third of Sailors. The few Engineers, viz., part of the 10th Company, with Captain Fisher, Lieutenants Longley and Maitland, and some of the, Volunteer Company of Sappers, were attached to the second brigade. The fire from the ships continued throughout the day and night of the 28th, and the assault was decided on for the morning of the 29th. Stuart was appointed to lead the escalading party of the French brigade, and thus describes his experiences in the report he furnished on his share in the operation:—

"I advanced up the muddy creek or rivulet, which debouches from the city wall and joins the ditch at this point. I advanced up to the wall, and found it be faced with stone, having a slope or batter of about one fourth, and apparently about twenty-seven feet high. . . . I found that the stream from the city wall, by being arched over, offered a height of enceinte less by three or four feet than that of the adjoining portions. I deemed this such a suitable point for escalade, that I reported its nature at once to the French officers. . . . About ten minutes before nine o'clock two ladders were planted on the top of the arch, on the right of the flank, some others being at the same time raised at the

breach on the left. . . . The party on the right, with which I entered, pursued the flying Chinese, who, however, fired at every piece of cover they came to; only once, seeing our small numbers, did they make a stand till we came to within thirty yards of them."

Cooke, in his work on China at this period, thus alludes to the escalade:—

"At the same instant of time Stuart of the Engineers was balancing in air upon a breaking ladder at the north side of the bastion, but although he sprang to another and got upon that, I believe that two or three Frenchmen, springing to the wall from the breaking ladder, got up before him. Let me also mention Corporal Perkins and Daniel Donovan, both Volunteer Sappers, who held their place well among the French assailants, and were among the first over the wall."

The East Gate, attacked by the British, was broken open by Lieutenant Longley, R.E., and a passage made for the entry of the storming column.

The troops once upon the ramparts and the Chinese defenders cleared away, the capture of Canton was soon completed and the allies settled in the place. It was decided to destroy the two outlying forts on the north, which had been named respectively Gough and Blue jacket. Cooke thus describes the incident:—

"The French, who, having no Engineers of their own, were directed by Captain Stuart, took Bluejacket Fort; and Gough Fort was mined by the senior Engineer officer, Captain Mann. When the appointed time had come and passed, a rocket went up, the men hurried out and the solid stone buildings stood intact in their loneliness . . . . Then came a succession of loud sharp, cracking, shivering explosions, throwing fragments high in the air, and frightening but not killing a kite at the moment hovering over Fort Gough. There were at least twenty successive explosions at the larger fort. When the smoke cleared, a thousand years seemed to have passed in a few seconds, the square substantial fortification was a picturesque ruin, such as we see at Carnarvon or Drachenfels."

Admiral de Genouilly was so much pleased with the assistance rendered to him by Lieutenant Stuart, that, when that officer returned to his ordinary duties, he wrote as follows to General Straubenzee:—

"Je dois également en remettant á la disposition de votre Excellence M. le Lieutenant Stuart qu'elle avait eu l'obligeance d'attacher à notre Corps Expeditionnaire comme officier du Génie, témoigner de tout le cas que je fais de cet officier. Bon militaire, Officier instruit, chaque jour m'a confirmé dans la bonne opinion que j'avais conçue dès le premier jour de M. Stuart, et il me sera bien agréable de le voir devenir Membre de la Légion d'Honneur. Je remercie donc votre Excellence d'avoir bien

voulu placer aupres de moi un si digne Representant de l'armée Britannique, et prends la liberté de le recommander tout particulièrement á la bienveillance de son Honorable Commandant en chêf.

"C. Regnault de Genouilly,
"Comt. en chef des forces Navales de S. M. l'Empereur des Français en Chine."

In laying the electric telegraph between the General Head Quarters at Canton and the landing place, Captain Fisher, R.E., who had charge of the operation, discovered that ordinary single needle instruments were sent instead of magnetic ones, and that as the latter had been intended no batteries were with the stores.

The difficulty was solved in a somewhat ingenious manner, as described in his report :—

"Sulphuric acid was obtained from the Medical Department and zinc was purchased in the city, but no copper could be procured in Canton. A portion of the silicate of soda had been sent from Hong Kong in old powder barrels with copper hoops. These were replaced by iron ones and cut into lengths to fit the cells, which were glass tumblers. A battery composed of 12 of these cells was found sufficient to send messages from Head Quarters to the landing place, but the current was rather weak, the copper plates being narrow and affording too small a surface."

The year 1858 passed without any important military operations, the troops occupying the city of Canton. Negotiations had brought about a treaty which was signed at Tientsin, in June, 1858, the Peiho forts having been forced by a naval expedition, in which a Company of Engineers took part; but as the treaty was to be ratified at Pekin, Canton was held as a pledge.

Captain Fisher gives in his "Three Years' Service in China," many amusing details of the manner in which works under the Royal Engineers had to be conducted with the Cantonese contractor, whose knowledge of our language was strictly confined to pigeon English :—

"I remember we wanted a verandah made to our mess-room ; it was a difficult thing rather to explain, but when the man was told to 'make one piecey makey walkey topside makey look see' he completely understood the case. I like that topside and bottom side ; why should the terms not be as generally used as inside and outside? To 'look see' is, of course, much more than to look ; perhaps what an American would call to prospect?"

The next quotation refers to a contractor named Sing-Chong :—

"We accused him of having tried to overreach us in some bargain, his answer was, 'How you think my can talkee so muchee lie, makey cheat; just now my too muchee old man more sixty year old in a few

years must makey die. When my die my wantee go topside, suppose I talkee that lie how can? You thinkee my that fool, for a few dollars makee that lie that cheat?"

And again—

"He gave an amusing instance of the imitative genius of his nation on one occasion. It was determined to build some wooden huts on the heights and Sing-Chong agreed to execute the work. He was given a sheet of paper having on it at the bottom a *plan* of the building, showing the joists and flooring; above that an *elevation* showing the boarded sides and windows, and above that again a cross *section* showing the proportions of the gable as well as the sides of the hut. After all had been explained to him in pigeon English he was told to make a rough sort of model according as he understood it, before preparing the material for the actual work. In a couple of days the model was presented. It was a pagoda-looking affair of the following construction:—The lower story was square, each side being the length of what the building should be; it was framed and boarded, and was in fact the *plan* of the building turned up on edge, forming the four sides of the figure; above this was a story, also square, with windows, which was the *elevation;* and, the whole having been covered with a flat roof, he put in the centre a square pagoda with a pyramidal roof, each side the width of the cross *section* of the hut. He hinted that we had forgotten the doors and staircases, and that he had taken the liberty to add a railing round the edge of the flat roof to prevent the soldiers falling off when they walked forth out of the top pagoda."

Being much annoyed by acts of hostility in spite of the public proclamation of the treaty of peace, and the town of Namtow having become notorious for its disaffection, General Straubenzee determined to attack the place. This was done on August 11th, 1858. The Engineers with the force were Lieutenant-Colonel Wynne (who had replaced Lieutenant-Colonel Lugard as Commanding Royal Engineer), Captain Lambert, Lieutenant the Hon. W. le Poer Trench, and Lieutenant Longley, A.D.C. to General Straubenzee. A detachment of the 10th Company, R.E., was also present. The matter was carried to a successful conclusion with but trifling loss on our part. Unfortunately, Captain Lambert, whilst mounting a ladder in the escalade, was shot by one of the sailors who was mounting below him, and died within a few hours, the bullet having shattered his thigh bone—

"He was a most gallant and talented officer, and his loss to the service and to his friends is deeply to be deplored."—(General Straubenzee's despatch, August 21st, 1858.)

After a long delay it was determined that a naval expedition should proceed with the British and French Ambassadors to conduct them to Pekin. They left Canton on May 17th, and after some days of preparation at Hong Kong, sailed for the

north on the 26th. Captain Fisher, Lieutenants Longley and Maitland, with the 10th Company of Engineers, accompanied the fleet—which put in at various ports on the way, at the last of which, viz., Shanghai, it was notified that serious opposition was likely to be met with at the entrance of the Peiho river, where the forts, so easily captured the year before, had been greatly strengthened. Admiral Hope, who had remained at Hong Kong for a few days to bring on the mail, arrived at Shanghai on June 12th, and began preparations in case of resistance. The island of Sha-lui-tien was named as the place of assembly for the combined fleet.

The force reached the rendezvous on June 16th, and on the following day the Admiral started on a reconnoitring expedition, taking Captain Fisher with him. When approaching the forts, the first impediment they encountered was a row of iron stakes, which Fisher thus describes :—

"One of these, which we saw slung to a junk's mast, and in the act of being lowered, was duly examined and sketched. Its lower part consisted of three iron-pointed legs, on which it stood firmly. The stake rose from the junction of these legs to a total height of about twenty-five feet, and from near the same point an arm stretched out in a slanting position towards the front, pointing upwards, and having its point rather below the top of the main stake. At high water this point would be a little under water, and would deal a severe blow to the bottom of an approaching vessel."

They then came across a second construction, consisting of

"a series of pontoon-shaped timbers, that is, logs of wood fixed together so as to form cylinders, with conical ends ; each was about 24 feet long, and 18 inches in diameter. These were used to float two chains and a cable across the river in the following way :—The cylinders had each a hole in the centre, through which the cable passed, and they were arranged along it at intervals of about 15 feet. Large chains were stretched across the river, underneath the ends of the cylinders, and attached to either end of the cylinder by smaller chains. This was a wise arrangement, for it would be possible to cut the chain which passed over the end of the cylinder ; but if this were done, the great chain would only be dropped a few inches ; not divided in its length, and it was stretched too deeply to enable one to get at it to work actually upon it."

The reconnaissance was followed by sundry ineffectual interviews on the subject of allowing the squadron to pass. It was at length decided to move up the ships, and on the 20th Fisher made additional observations, amongst others, that there was a wet ditch.

"Watching the men coming out, we could see, by their looking down as they walked, and balancing themselves with their arms, that they

passed over a narrow bridge. The duration of this mode of walking, and the number of steps they took, gave us an idea of the width of the ditch."

For several days the allied squadrons were engaged in making preparations for forcing the passage, and on the 25th the gun-boats were brought up and anchored close to the barrier of iron stakes. The Engineers were distributed amongst them, with orders to act as marksmen, and keep up a fire on the embrasures of the forts. Each little detachment had an assortment of tools and implements for use on landing, so that there might be a proper provision of skilled workmen and *matériel* attached to every ship. Captain Fisher was with the Admiral on board the *Plover*, commanded by Lieutenant Rason. The Company was divided into two, one half, under Lieutenant Longley, being distributed amongst the right squadron of gun-boats, he himself being on board the *Kestrel;* the other half, under Lieutenant Maitland, amongst the left squadron, he being on board the *Forester*.

It was decided not to attack until the tide had begun to ebb. The squadron therefore anchored, and awaited the critical moment. The intention was to force the obstacles if possible, and then take up a position above the forts at a point from which they could be enfiladed, and even taken in reverse. At 2 p.m. the orders were given to advance. The *Opossum* gun-boat steamed ahead, and

"quietly she lay alongside the stakes, made fast a hawser round one of them, turned her engines astern, backed out of the way with her burthen, and dropped it on one side; again she went up and removed another, and deposited it, and then laid down buoys to mark the opening thus made." (Fisher.)

As soon as this was done the squadron advanced, and charged in succession at the boom, which, however, did not give way. The forts now opened fire.

"A shot or two first pass over us, and then they come in to us hot and fast. Rason's voice rings out clear, 'Let go the anchor,' and then we are in the focus of the lines of fire, riding at our anchor, and deliberately returning from our guns the storm of shot poured on us from all sides."—(Fisher.)

The action continued for a couple of hours, the ships suffering severely. By this time the fire of the forts had much slackened, and it was determined to land the Engineers and Marines, with some Seamen, and endeavour to capture the works. Each ship supplied its quota of stormers, the American commodore lending his steamer to tow the boats to the point of assembly, below the stakes.

"With hearty, ringing cheers they started in a headlong race for the mud bank opposite the southern or lower bastion of the great South Fort. Here, as the boats grounded, the men jumped eagerly overboard, many going out over the stern instead of the bow, and, getting into deep water, wetted their ammunition and rendered their rifles unserviceable. A portion of the force pressed on as skirmishers, whilst others struggled to bring up the ladders and portable bridges which had been prepared for crossing the ditches. On these men the enemy's fire was specially directed, and they suffered great loss. The extent of mud we had to traverse was between 500 and 600 yards. It was over the ankles and stiffish wading, but there were holes in it, probably dug on purpose, in which one was likely to get, unless one walked very circumspectly; and here the mud was much softer and deeper, and many and many a man fell in these holes and got his rifle stuffed up with mud. At about 400 yards from the edge of the mud we came to a row of stakes or piles, driven about four feet apart and two or three feet high. Here the men, being exhausted, rather halted and delayed, and in consequence suffered a loss, for the fire seemed to be particularly heavy at this point. Probably these stakes were driven to check the approach of attacking boats at high water, and were consequently expressly commanded by the guns of the works.

"About 100 yards from these was a bed of green rushes, perhaps 40 yards wide; after which a little more mud, and then a ditch about 15 feet wide and 5 feet deep; this was tidal, and at the time of the assault was consequently nearly dry, but extremely difficult to cross from the great tenacity of the mud. Having dashed into it rather impetuously, I thought I should never get out; I was really some minutes crawling across. Here also many a rifle got full of mud. A few yards in front of this was another ditch, but this was kept full of water, and it was quite a pleasure to have something to swim in after all the sticky walking we had had. I was unfortunate enough here, when swimming, to kick up my scabbard and drop my sword to the bottom. The earth excavated for this ditch had been thrown up on the bank, and gave us a little cover, under which we squatted with our legs in the water, waiting for the bridges and ladders to be brought up to enable the mass of the men to get across; but it became evident before long that the attack must fail; the bridges were shot to pieces, three ladders only were brought up, and these were soon broken. There were about 60 of us in the front ditch and perhaps half a dozen serviceable rifles. We sent back for dry ammunition and spare arms as our only chance, but it was evident that the assault had failed. And shortly after an order was sent to us to remain under cover if we could till dark and till the tide should rise, when boats should be sent to bring us off. So here we lay huddled up against the bank with our legs in the ditch, whilst the enemy plied us with shot and arrows, which, however, could not do us much harm so long as we lay close, until it struck them to fire their arrows vertically, so that they fell among us. We were about 20 yards from the work. The space in front of us was covered with pointed

stakes driven in the ground, and the bank in front and behind us was like a hedgehog's back from the arrows sticking in it. . . . . At about 10 p.m. we sent away all the wounded, allowing those without rifles or having disabled weapons to conduct them ; thus by degrees we reduced our numbers, and eventually all got down to the water's edge, when we waded out to the boats sent for us."—(Fisher.)

Lieutenant Longley was badly wounded, and of the eighty-two Sappers engaged, three were killed and sixteen wounded, of whom one died. Lieutenant Maitland led the ladder party on the occasion.

This disaster put an end for the time to all further attempts at reaching Pekin, and the squadron was withdrawn to await reinforcements and instructions from home. Some blame was at the time attributed to the officers in command for the fool-hardiness of the assault. Doubtless it proved an error, and the evil was intensified by the delivery of the attack at low water, when it was necessary to pass over upwards of a quarter of a mile of tenacious mud, which at high water would have been completely submerged. At that time of tide the boats could have approached comparatively close to the forts, and the troops with their ladders would have reached the spot fresh and ready for the escalade. But it must be remembered that the period of high tide had been selected as the time for commencing the advance of the fleet, because then and then only was it safe for the gun-boats to approach the obstructions, especially the barrier of iron stakes. The tide ran extremely strong in the river, and until it had turned any vessel nearing the stakes would probably have been driven on them and impaled. It was not at the time imagined that any serious opposition would be offered. It was only when the ships became involved between the stakes and the boom that fire was opened on them. Then the course of events could not be controlled. It was absolutely necessary to engage the forts, and when, after some hours' bombardment, their fire slackened, it seemed equally necessary to attempt their capture. It must also be borne in mind that up to that date every assault against the Chinese had proved almost ridiculously easy, and no stand worthy of the name had been made. As Fisher wrote : " Never had they been known to stand the cheer and charge of our men. . . . . The Chinese saying is, 'No two piecey man can stop in one man's place, suppose you must come I must go.' " There was nothing to lead the Admiral or his advisers to imagine that any serious resistance would now be offered, especially after the severe handling the forts had met with. Whatever the value of these arguments may be, they only concern the naval authorities. The Engineers were there to carry out what orders they might receive, and had

Captain Fisher deemed the attempt injudicious, it would have ill become him to remonstrate. His was the post of danger with his Company of Engineers, and had he seemed to flinch, and the attack in consequence abandoned, he would have covered himself with shame. Whatever verdict may be passed on the affair, no one can deny that the Engineers did their duty manfully. They were the first in the advance, and the last in the retreat.

When the expedition returned southward on July 11th, Fisher was left behind to survey the coast in readiness for future operations, and Her Majesty's ships *Cruiser*, *Forester*, and *Starling* were detailed for the same duty. The result was that, when Sir Hope Grant renewed the attack in August, 1860, he was well provided with a chart of the localities likely to be visited.

By this time the Indian Mutiny had been quelled, and troops could be spared from that country for the new Chinese war. Lieutenant-General Sir Hope Grant was placed at the head of the *corps d'armée* of two divisions, collected to enforce the treaty of Tientsin; and Major-General Sir Robert Napier, R.E., commanded the 2nd division. The Engineers were at first allotted to the two divisions, as follows:—The 10th, 23rd, and half the 8th Company were with the 1st Division; the A and K Companies of Madras Sappers were under Napier in the 2nd Division.

The Officers of Engineers with these Companies were as follows:—10th Company Royal Engineers, Major Fisher, Lieutenants Maitland and Thaine. 23rd Company Royal Engineers, Major Gerald Graham, Lieutenants Malcolm, Pritchard, Harrison and F. Hime. 8th Company Royal Engineers, Lieutenant E. H. Courtney. Madras Engineers: A Company, Lieutenants Gordon and Filgate; K Company, Lieutenant Traill. There were also as acting Engineers with these latter Companies, Captains Dakeyne, Swanston, and Lieutenant Foord, all of the Madras Infantry. Immediately after landing this disposition was changed, and all the Engineers with the army were brigaded together, with Lieutenant-Colonel Mann as their Commanding Royal Engineer.

It was decided on this occasion not to attempt forcing a passage past the Taku forts, but to land at Peytang, a village about ten miles to the north, and approach them on the land side. This was done, and between August 1st and 7th the whole army was disembarked. It advanced on the 12th, and after some skirmishing and many difficulties, owing to the swampy character of the country, the enemy was driven back, Sinho and Tangkoo being occupied. It was now determined to assault the forts. There were four of these, two on the north side and two

on the south. The French were desirous of crossing the river, and making the first attempt on the southern forts, but Sir Hope Grant was firm in his determination to secure the northern forts first. In this he was greatly guided by the report of Major Fisher, R.E., who had had good opportunities of reconnoitring them.

"The French mistrusted my statement that the great south fort possessed few guns, if any, which could be brought to bear on the great north fort and its approaches, whilst the latter almost entirely commanded the former. Indeed, the south fort could hardly have been held with the great north fort in our hands. Sir Hope, however, acted on my report, and the result proved that his plan was right."

Meanwhile it was decided to bridge the river at Sin-ho, the French constructing one half and the English the other. This was done by the 10th Company Royal Engineers, assisted by the navy, the whole under the charge of Major Fisher. On the 17th, Lieutenant-Colonel Mann and Lieutenant Courtney made a close reconnaissance in front of the first fort to be attacked. They found that on the right there was good hard ground, free from obstacles to within 200 yards of the fort. Sir Hope Grant on this gave orders that five batteries should be thrown up. No. 1, for six French field-pieces, and one English 8-inch gun. No. 2, for three 8-inch mortars. (It may be noted that one of the platforms in this battery was made of Chinese coffin lids, six inches thick.) No. 3, for two 32-pounders, and two 8-inch howitzers. No. 4, for two 8-inch guns, and No. 5, for six Armstrong guns. All this artillery, except the six field-guns in No. 1 battery, was British. The work was performed in two reliefs, and the Engineers engaged in it were—Major Graham, R.E., and Captain Shaw Stewart, M.E., as Executive officers; Lieutenant Harrison, R.E., Captains Swanston, Dakeyne, and Lieutenant Foorde, of the Madras Sappers, as Acting Engineers. Two of the batteries were revetted with straw fascines obtained from a Tartar camp, where they had formed the sides and roof of the barrack rooms. They were 12 feet long by 6 inches in diameter, and answered the purpose very well.

These batteries were constructed on the night of the 20th; on the following morning they were armed and fire opened.

After a bombardment of about four hours it was evident that the artillery of the Taku fort had been much crushed; orders were therefore given for an assault. The Engineers accompanying the column were divided into four parties—those with the small pontoons intended for crossing the wet ditch were under Lieutenant Pritchard, R.E., the ladders under Lieutenant Hime, R.E., a detachment for removing obstacles under Lieutenant

Trail, M.E., and another with powder bags under Lieutenant Clements, R.E. The whole being under the command of Major Graham. Lieutenant Courtney acted as Adjutant to Lieutenant-Colonel Mann, the Commanding Royal Engineer.

The French sent a column to attack in conjunction with ours; this advanced by the right and approached the angle of the work resting on the river; the British troops, consisting of the 44th and 67th Regiments, moving straight towards the gate of the fort. Here they found two wet ditches, the space between them being so thickly staked as to be almost impassable. The pontoons proved useless, they had received so much injury during the advance that they had lost all power of flotation, the storming party, therefore, had to wade across the ditches with the water nearly up to their armpits, and then to clamber in as best they might.

"Colonel Mann, of the Royal Engineers, who was amongst the first over the two ditches with Major Anson, A.D.C., had, after much hacking and cutting with their swords succeeded in severing the ropes which held up the drawbridge. Down it came with a crash, but it was so shattered by shot that at first it seemed incapable of sustaining any weight. A single beam of the outer bridge had been left by the Chinese, it was quite loose, and rolled about, yet it enabled many to cross over."—(Wolseley's "War with China in 1860," p. 135.)

After a sharp struggle and much loss the leading stormers of both French and English columns gained the parapet, whilst a few had made their way within the gate. The Chinese still offered a stubborn resistance, and it was some time before the fort was cleared of its defenders. As soon as the allies were safely established within the work, preparations were made for the attack of the other fort on the northern side. Meanwhile a boat had put off from the southern side, bearing a flag of truce. Nothing satisfactory could be made out; the mandarin who was brought over said he was merely the bearer of letters to the British and French envoys. As time was passing, the troops were ordered to advance, and two fresh regiments were detailed for the storm of the second fort.

They entered without resistance, and the second success was eventually rendered complete by the surrender of the southern forts. These, indeed, were no longer tenable, now that the allies were in possession of what clearly proved to be, as Sir Hope Grant had all along foreseen, the key of the position. Lieutenant-Colonel Mann thus wrote of the officers engaged:—

"Major Fisher has so frequently been selected for special duties connected with this war, and performed them so satisfactorily, that his zeal and ability are already well known; but I should be sorry to miss this or any opportunity of adding my testimony as to the energy and skill

with which his duties are performed, and the active assistance I have at all times received from him. Major Graham conducted the assaulting party, and, when wounded with the bridge party and obliged to mount on horseback, directed the movements of the ladder party, until his horse also being wounded, he was obliged to fall to the rear. Lieutenant Pritchard and the other officers of the assaulting party were among the first to gain a footing in the fort. Of the non-commissioned officers and Sappers, Serjeant-Major Knight, Serjeant McEachran, Corporals Willcocks, Matheson, and Filkin, and Sapper John Squires distinguished themselves."

The war now seemed over. The Chinese authorities signed a capitulation, by which all the defensive posts on the river, as far as Tientsin, including that town, were surrendered. The army advanced leisurely; the French on one side of the river, the British on the other, and Tientsin was reached on September 1st. At this point negotiations were opened direct with Pekin, and for some time it appeared as though all was to be peaceably arranged. This, however, proved only a sham, as had been the case on so many previous occasions. An army was being assembled with a view to surrounding and overwhelming the allies. The treacherous capture of Messrs. Parkes, Lock, Bowlby, De Norman, Brabazon, Andersen, and others of the party which had advanced to Tung-chow under a flag of truce, led to the abrupt termination of the negotiations. The battles of Chang-kia-wan and Pa-le-cheaou followed, and the Chinese were taught a lesson as to their powers of resistance against the allies. The ground being thus cleared, the army marched on Pekin, and preparations were begun for assaulting the fortifications.

Meanwhile the base of operations had been advanced to Tungchow, and the siege train, escorted by the A Company of Madras Sappers, had arrived. All this time negotiations were going on, with the object, if possible, of rescuing the prisoners in the hands of the Chinese, who were then imprisoned at Pekin. These failed, and at last it was decided that force must be employed. The Engineer operations and the subsequent destruction of the Summer Palace were thus described by Captain C. G. Gordon (afterwards General Gordon) in one of his letters:—

"On the 11th October we were sent down in a great hurry to throw up works and batteries against the town, as the Chinese refused to give up the gate we required them to surrender before we would treat with them. They were also required to give up all the prisoners . . . . To go back to the work, the Chinese were given until twelve on the 13th to give up the gate. We made a lot of batteries and everything was ready for the assault of the wall, which is battlemented and forty feet high, but of inferior masonry. At 11.30 p.m., however, the gate

was opened and we took possession, so our work was of no avail . . . . Owing to the ill-treatment the prisoners experienced at the Summer Palace the General ordered it to be destroyed, and stuck up proclamations to say why it was ordered. We accordingly went out, and after pillaging it burned the whole place, destroying in a Vandal-like manner most valuable property which could not be replaced for four millions. . . . . Quantities of gold ornaments were burned, considered as brass. It was wretchedly demoralizing work for an army. Everybody was wild for plunder. You would scarcely conceive the magnificence of this residence, or the tremendous devastation the French have committed. The throne and room were lined with ebony carved in a marvellous way; there were huge mirrors of all shapes and kinds, clocks, watches, musical boxes with puppets on them, magnificent china of every description, heaps and heaps of silks of all colours, embroidery and as much splendour and civilization as you would see at Windsor; carved ivory screens, coral screens, large amounts of treasure, &c. The French have smashed everything in the most wanton manner. It was a scene of utter destruction which passes my description."

The war was now at an end, the treaty of peace which followed saved some of the Peiho forts from destruction; but before that had been signed considerable progress had been made by the Engineers of the two nations in their demolition.

Lieutenant-Colonel Mann and Major Fisher both received the honour of the C.B. for their services in this campaign.

APPENDIX TO VOLUME I.

THE following Royal Warrants are amongst many alluded to in this Volume, and have been selected as those which have most affected the organization of the Corps.

The pages on which they have severally been quoted are given to guide the reference.

Vide page 172.

GEORGE R.

Whereas it hath been humbly represented unto Us that the Establishment of Twenty-nine Engineers on the Quarter Books of Our Office of Ordnance, formed by Order of his late Majesty Our Royal Predecessor, in Council dated the 22nd Day of August, 1717, is much too small to answer the Several Purposes Our Service doth and may from time to time require. Our Will and Pleasure therefore is, That you cause Eight Practitioner Engineers to be added to the said Establishment of Engineers, at an allowance of Three Shillings ℔ diem each, to be made to them on the Quarter Books of Our said Office of Ordnance; The same to commence from the First day of January next, which we do hereby Establish accordingly. And Our further Will and Pleasure is, That you cause the pay of the said Eight Practitioner Engineers, amounting to Four Hundred and Thirty Eight Pounds per Annum, to be added to the Annual Charge of the Ordinary of Our Office of Ordnance and to be inserted in your Estimates to be presented from Time to Time to Parliament. And for so doing, this shall be, as well to you as to the Auditors of Our Imprests and all other Our Officers and Ministers herein concerned, a sufficient Warrant. Given at Our Court at St. James's, the Sixteenth Day of December, 1755, in the Twenty-Ninth Year of Our Reign.

By His Majesty's Command,

HOLDERNESSE.

To Our Right Trusty and Well-Beloved Councillor, Sir John Ligonier, Knt. of the Bath, Lieutenant-General of Our Ordnance, and to the Rest of the Principal Officers of the same.

Vide page 188.

At the Court of St. James's, the 3rd day of March, 1759. Present, The King's most Excellent Majesty in Council. Upon reading at the Board a Representation from the Lieutenant-General and Principal Officers of His Majesty's Ordnance, dated the 23rd of last Month, His Majesty this Day took the said Representation into His Royal Consideration, together with the Establishment of Engineers now subsisting, And likewise the New Establishment proposing to increase the Number of Engineers to Sixty-One, and was pleased, with the Advice of His Privy Council, to Approve of the said New Establishment, and accordingly to Order, as it is hereby Ordered,

That the Lieutenant General and Principal Officers of His Majesty's Ordnance do cause the said New Establishment (a copy whereof is herewith annexed) to be carried into immediate and effectual Execution instead of all former Establishments of Engineers, which are to cease and to be discontinued for the future.

W. SHARPE.

New Establishment to consist of Sixty-One Engineers :—

		℔ Annum each.			℔ Annum.		
		£	s.	d.	£	s.	d.
1 Chief	at 27/6 per diem.				501	17	6
2 Directors ...	at 20/-	365	0	0	730	00	0
4 Sub-Directors	15/-	273	15	0	1,095	00	0
12 In Ordinary ...	10/-	182	10	0	2,190	00	0
12 Extra Ordinary	6/-	109	10	0	1,314	00	0
14 Sub-Engineers	4/8	85	3	4	1,192	6	8
16 Practitioners ..	3/8	66	18	4	1,070	13	4
Total ...					8,093	17	6

All the Establishments at the foreign Garrisons are to cease for the future, and in place thereof the following Extra Allowances are to be made when employed on those services.

A Director 5/-
Sub-Director 5/-
In Ordinary 2/6
Extra Ordinary 2/-
Sub-Engineer 2/-
Practitioner 2/-
} per diem each.

Vide page 213.

GEORGE. R.

Whereas you have represented to Us that the Works to be carried on in various Parts of Our Dominions will make it necessary to employ a great Number of Engineers and the Extra Pay which was given to them during the last War being greater than We have judged reasonable to allow in Times of Peace, We have thought proper to Order and do hereby Direct that all former Allowances of Extra Pay to Officers of Our Corps of Engineers shall cease from the 30th Day of September next, and that in Lieu thereof the following Allowances of Extra Pay shall commence on the 1st October next viz:—

To each of Our Engineers who shall be employed in Africa, of whatever rank he may be, an Allowance of Twenty Shillings per Day. To each of our Engineers who shall be employed in Our Island of Jamaica, or any of Our Islands in the West Indies, or in any of Our Provinces of Quebec, Island of St. John's, Nova Scotia, or Newfoundland, an Allowance equal to the Ordinary Pay which, according to his Rank in Our Corps of Engineers, he will be intitled to receive on the Establishment hereinafter directed to take Place. To each of Our Engineers who shall be employed at Gibraltar, or in Great Britain, Jersey, or Guernsey, or the Isle of Man, an Allowance equal to one Half of the Ordinary Pay, which, according to his Rank in Our Corps of Engineers, he will be intitled to receive on the Establishment hereinafter directed to take Place; but such Allowance is not to extend to the Engineer-in-Chief in Great Britain or at Gibraltar.

All which Allowances are to commence in respect to each Officer on the Day he sets out from the Place where he was before resident for the Place to which he is ordered, and are to cease from the Day he quits his Station. And these Allowances of Extra Pay are to be in lieu of all other Allowances for Lodging, Fire, and Candle, and for Travelling within five miles of the Place where they are stationed.

We have, moreover, thought proper to order, and do hereby direct, that an Allowance equal to the Ordinary Pay which, according to his Rank in Our Corps of Engineers, he will be intitled to receive on the Establishment hereinafter directed to take Place, shall be made to each of Our Engineers who shall be employed in making Surveys, such Allowance to be independent of the above-mentioned Allowances of Extra Pay or of Allowance for Travelling to and from the Place where he may be employed, but is to be in lieu of all Bills for Horse-hire, Boat-hire, extraordinary Expences, Contingencies, or Travelling whilst employed in carrying on Surveys, and is to be made only during such time as he shall actually be in the Field or moving from Place to Place for such Purpose. But it is not Our Intention that this Regulation shall affect the Allowance of Twenty Shillings ℔ Day which, by our warrant of 31st Day of July 1765, We have made to Our Trusty and Well-beloved Lieutenant

Colonel William Roy, one of Our Engineers, "for inspecting, survey-
" ing, and making Reports from Time to Time of the State of the Coasts
" and Districts of the Country adjacent to the Coasts of this Kingdom
" and the Islands thereunto belonging."

And whereas you have represented to Us that it may happen that some Officers of Our Corps of Engineers may not be able from Age or Infirmities to perform such Duties as Our Service requires, and that there is no provision of a Corps of Invalids for Engineers to retire to, as there is for Officers in other Branches of Our Service, we have thought fit to establish and do hereby establish a Corps of Invalid Engineers, to consist of—

	℔ Day.		℔ Annum.		
	s.	d.	£	s.	d.
One Colonel, at	18	0	328	10	0
One Lieutenant-Colonel, at	15	0	273	15	0
Two Captains, each at	10	0	365	0	0
One ditto	6	0	109	10	0
One First Lieutenant	4	8	85	3	4
One Second ditto, at	4	0	73	0	0
7 Officers	£2 17	8	£1,234	18	4

And whereas you have represented to Us that the great Number of Subaltern Officers on the present Establishment of Our Corps of Engineers in Proportion to the Number of Captains is larger than in Our Royal Regiment of Artillery, whereby their Advancement in respect to Rank is greatly retarded, We have thought proper to direct that the present Establishment of Our Corps of Engineers as ordered by Our Warrant of the Eighteenth Day of November, 1782, consisting of—

		℔ Day.		℔ Annum.		
		s.	d.	£	s.	d.
The Master-General of Our Ordnance ...		Nil.		...	Nil.	
The Lieutenant-General of Our Ordnance		Nil.		...	Nil.	
One Engineer-in-Chief ...	at	44	0	803	0	0
Six Colonels	each at	17	0	1,861	10	0
Six Lieutenant-Colonels ...	each at	15	0	1,642	10	0
Nine Captains	each at	10	0	1,642	10	0
Nine Captains	each at	6	0	985	10	0
Twenty-two first Lieutenants	each at	4	8	1,873	13	4
And twenty-two second Lieutenants	each at	4	0	1,606	0	0
				Amounting to	£10,414	13 4

shall cease on the 30th September next, and that in Lieu thereof, the following new Establishment shall take Place on the 1st of October next, viz :—

		℔ Day.		℔ Annum.		
		s.	d.	£	s.	d.
The Master-General of Our Ordnance ...		Nil.			Nil.	
The Lieutenant-General of Our Ordnance		Nil.			Nil.	
One Engineer in Chief	at	44	0	803	0	0
Five Colonels	each at	18	0	1,642	10	0
Five Lieutenant-Colonels	each at	15	0	1,368	15	0
Ten Captains	each at	10	0	1,825	0	0
Ten Captains	each at	6	0	1,095	0	0
Twenty First Lieutenants ...	each at	4	8	1,703	6	8
Ten Second Lieutenants	each at	4	0	730	0	0
				£9,167	11	8
Corps of Invalids as before mentioned				1,234	18	4
				£10,402	10	0

And We do direct that whenever any Engineer is unable to attend such Duty as he may be ordered upon, and you shall judge that he is intitled from his Services to retire, you do place him in the Corps of Invalids in the same Rank he holds in the Corps in case there shall then be a Vacancy. And in case there shall not then be a Vacancy of such rank, that you do cause his Name to be entered in the Office of the Clerk of Our Ordnance, to succeed to the first Vacancy of such Rank that shall happen in the said Corps of Invalids. And no Officer who shall be appointed to the Invalids, or shall be entered in the Office of the Clerk of Our Ordnance to succeed to a Vacancy in that Corps, shall at any Time after rise to any higher Rank, and no Invalid Officer shall be liable to be called upon to serve again except in Cases of great Emergency, and then only in Great Britain.

And We do further direct that when there shall be any Vacancies in the Corps of Invalid Engineers, and there shall not happen to be any of the Acting Engineers proper to fill them up, you do recommend to Us additional Officers to be appointed to the Acting Corps of Engineers, who are to be intitled to Promotion, are to be employed where wanted, and are in all Respects to be considered as forming part of the Corps of Acting Engineers; provided that, on the whole, no greater Number of Officers of each Rank be kept or paid than shall be borne on the two Establishments of the Acting and Invalid Engineers, and no greater Expence for Established Pay incurred than the Sum of £10,402 10s. 0d.

And We do further direct that you do cause the Expence of this New Establishment to be inserted in the Estimates of the Ordnance to be from Time to Time presented to Parliament.

And whereas by this Alteration of Our Establishment of the Corps of Engineers, the present six junior Second Lieutenants will become Supernumerary, We do direct that no Vacancies shall be filled up till the Number of Second Lieutenants be reduced to Ten, agreeable to this New Establishment; but that until such Reduction shall be completed, the Number

of Second Lieutenants over and above those fixed by the New Establishment, shall continue and serve as Supernumerary Second Lieutenants in Our said Corps of Engineers, and shall receive Pay accordingly.

And whereas you have represented to Us that it would be for the Benefit of Our Service if a Committee of Engineers were established, to which all Plans and Estimates for the Construction of New Works or Buildings, or for the Repairs or Alterations of old ones were referred, and on which the said Committee should report to the Master-General of Our Ordnance previous to their being carried into Execution, We do hereby direct you to appoint a Committee of Five Engineers, for the Purpose of which the Chief Engineer shall be President and two at least of the other four shall be Field Officers.

And We do hereby direct that the said Committee shall meet at the Ordnance Office in the Tower two days in every Week, or as often as the Master-General may think necessary, to receive, examine, and report upon the several Plans and Estimates that shall be referred to them, and that the Clerk to the Chief Engineer and the Draftsman appointed to attend him shall act as Clerks to the said Committee, and shall keep Copies of all Plans and Estimates referred to the said Committee, and of their Proceedings thereupon. And We do direct that the four Engineers who shall be appointed of this Committee to assist the Engineer in Chief shall be considered as employed, and shall receive an Allowance of Extra Pay like other Engineers employed in Great Britain, that is to say, equal to one-half of the Ordinary Pay which, according to their Rank in the Corps, they will by this Establishment be intitled to receive. And for so doing, this shall be, as well unto you as unto all other Officers and Ministers herein concerned, a sufficient Warrant.

Given at Our Court at St. James's this Twenty-first Day of July, 1784, in the Twenty-fourth year of Our Reign.

By His Majesty's Command,

SYDNEY.

To our Right Trusty and Right Entirely Beloved Cousin and Councillor Charles, Duke of Richmond, Lenox and Aubigny, Master-General of Our Ordnance.

Vide page 216.

GEORGE R.

Whereas you have represented to us that it would be of advantage to Our Service that Our Corps of Engineers should be distinguished by the name of the Corps of Royal Engineers, and the rank and post of the said Corps in Our army should be established.

We, having taken the same into Our consideration, do hereby direct that Our said Corps of Engineers shall in future take the name of the Corps of *Royal* Engineers, and be so styled and called. And we are further

pleased to direct that Our said Corps of *Royal* Engineers shall rank in Our Army with Our Royal Regiment of Artillery, and whenever there shall be occasion for them to take post with any other corps of Our army the post of the Corps of Royal Engineers shall be on the right with the Royal Regiment of Artillery, according to the respective dates of the commissions of the officers belonging to the Royal Regiment of Artillery and Corps of Royal Engineers. And for so doing this shall be, as well unto you as unto all other officers and ministers herein concerned, a sufficient warrant.

Given at Our Court at St. James's the twenty-fifth day of April, 1787, in the twenty-seventh year of our reign.

To our Right Trusty and right entirely beloved Cousin and Councillor Charles Duke of Richmond, Lenox and Aubigny, Master-General of our Ordnance.

By His Majesty's Command

SYDNEY.

Vide page 398.

GEORGE R.

Whereas you have represented unto Us that it would be for the advantage of our Service if the Establishment of Our Corps of Royal Engineers was more nearly assimilated to the Principles on which the Battalions of our Royal Artillery are formed ; We have therefore thought proper to order and do hereby direct that the present Establishment of Our Corps of Royal Engineers as Ordered by Our Warrant, dated the 9th Day of May, 1801, and consisting of—

		Pay.					
		Per Diem.			Per Annum.		
The Master-General of Our Ordnance ...							
The Lieutenant-General of Our Ordnance .							
1 Chief Engineer		2	4	0	803	0	0
6 Colonels...	18/-	5	8	0	1,971	0	0
6 Lieutenant-Colonels	15/-	4	10	0	1,642	10	0
20 Captains	10/-	10	0	0	3,650	0	0
20 Captain-Lieutenants	7/-	7	0	0	2,555	0	0
40 First Lieutenants	5/8	11	6	8	4,136	13	4
20 Second Lieutenants	5/-	5	0	0	1,825	0	0
1 Adjutant		0	5	0	91	5	0
Total £		45	13	8	16,674	8	4

shall cease on the 30th day of April Instant, and that in Lieu thereof the following new Establishment shall take place on the 1st Day of May next :—

	Pay.					
	Per Diem.			Per Annum.		
	£	s.	d.	£	s.	4.
Colonel-in-Chief the Master-General of our Ordnance						
Colonel-in-Second, the Lieutenant-General of our Ordnance						
2 Colonels Commandant 44/-	4	8	0	1,606	0	0
2 Colonels... ... ... 24/-	2	8	0	876	0	0
2 ditto 20/-	2	0	0	730	0	0
4 Lieutenant-Colonels 17/-	3	8	0	1,241	0	0
2 ditto 15/-	1	10	0	547	10	0
20 Captains 10/-	10	0	0	3,650	0	0
20 Captain-Lieutenants 7/-	7	0	0	2,555	0	0
40 First Lieutenants 6/-	12	0	0	4,380	0	0
20 Second Lieutenants 5/-	5	0	0	1,825	0	0
1 Brigade-Major 10/-	0	10	0	182	10	0
Total £	48	4	0	17,593	0	0

And, for the Reason before mentioned, We have further thought proper to direct that the present Establishment of Royal Invalid Engineers, consisting of—

	Pay.					
	Per Diem.			Per Annum.		
	£	s.	d.	£	s.	d.
1 Colonel	0	18	0	328	10	0
1 Lieutenant-Colonel	0	15	0	273	15	0
2 Captains ... ... 10s. each.	1	0	0	356	0	0
1 Captain-Lieutenant	0	7	0	127	15	0
1 First Lieutenant...	0	5	8	103	8	4
1 Second Lieutenant	0	5	0	91	5	0
Total £	3	10	8	1,280	13	4

shall in like manner cease on the 30th Day of April Instant, and that the following new Establishment of the Invalid Engineers shall take place on the 1st Day of May next, viz. :—

	Pay.					
	Per Diem.			Per Annum.		
	£	s.	d.	£	s.	d.
1 Colonel	1	4	0	438	0	0
1 Lieutenant-Colonel	1	0	0	365	0	0
1 Ditto	0	17	0	310	5	0
Carried forward ...	3	1	0	1,113	5	0

	Pay.					
	Per Diem.			Per Annum.		
	£	s.	d.	£	s.	d.
Brought forward	3	1	0	1,113	5	0
4 Captains ... . 10/- each	2	0	0	730	0	0
1 Captain-Lieutenant	0	7	0	127	15	0
1 First Lieutenant...	0	6	0	109	10	0
1 Second Lieutenant	0	5	0	91	5	0
£	5	19	0	2,171	15	0
Corps of Royal Engineers	48	4	0	17,593	0	0
Corps of Royal Invalid Engineers ...	5	19	0	2,171	15	0
Total ...	54	3	0	19,764	15	0

And whereas by the above new Establishment of Our Corps of Royal Engineers We have thought proper to discontinue the Office and Title of Chief Engineer, We do hereby direct that you or the Master-General of the Ordnance for the time being do select from time to time from among the Senior Officers of Our Corps of Royal Engineers such Officer as from his Knowledge, Experience, and Abilities you shall judge most proper to perform the important Duties hitherto entrusted to the Chief Engineer, and which said Duties he is to execute under the Style and Title of Inspector-General of Fortifications and Works, as well as of all Corps attached to the Engineer Department of Our Ordnance. And whereas you have represented unto Us that the Officers of Our Corps of Royal Engineers must necessarily continue to be entrusted with the Expenditure of large Sums of Money in the Execution of various Works in all Parts of Our Dominions and that their duties require great and constant Exertions peculiar to the Nature of that Service, and that they are frequently removed from one Station to another, and deprived of several Advantages common to Officers in most other Parts of Our Service, for which Reason specific Allowances have been granted to them by former Warrants. We have, therefore, thought proper and do hereby direct that the following Allowances of Extra Pay shall in future be granted to the Officers of Our Corps of Royal Engineers, viz. :—

To the Officer performing the Duties of Inspector-General, Forty Shillings per diem.

To each of Our Royal Engineers who shall be employed with Our Armies in the Field or in any Part of Our Foreign Dominions, Gibraltar excepted, an Allowance equal to the Pay which according to his Rank in Our Corps of Royal Engineers he is entitled to receive on the Establishment above ordered to take place.

To each of Our Royal Engineers who shall be employed at Gibraltar or in any part of Our United Kingdom of Great Britain and Ireland, or in the Islands of Jersey, Guernsey, or the Isle of Man, an Allowance equal to one-half of the Pay which, according to his Rank in Our Corps

of Royal Engineers, he will be entitled to receive on the Establishment above ordered to take Place.

To each of Our Royal Engineers who shall be employed on those Parts of the Coast of Africa where a higher extra Pay than common has usually been granted, the allowance of Twenty Shillings ℔ Day, but these allowances of extra pay are not to extend to any Royal Engineer who shall receive any similar allowances from another Department, unless the Master-General of Our Ordnance shall judge it proper to grant them.

All Allowances of extra Pay are to commence in respect of each Officer on the Day he shall receive his Orders for Duty, either from the Master-General of Our Ordnance or from the Inspector-General, but the Payment of such extra Pay is not to be made until the Inspector-General shall grant a Certificate that the Officer entitled to extra Pay lost no time in proceeding to his Station.

In Cases where Officers of Our Corps of Royal Engineers shall be ordered to proceed upon Duty from one Station to another, either at Home or Abroad, the Allowances of extra Pay to which they may be respectively entitled under the Regulations contained in this Our Warrant shall be continued provided the Inspector-General shall transmit his Certificate that such Officers lost no time in obeying the Orders they received.

When Officers of Engineers shall be appointed to any of Our Stations Abroad, the extra Pay allowed for Home Service is to be granted to such Officers from the Day they shall receive their Orders to prepare for Foreign Duty, and the extra Pay allowed upon Foreign Service is to commence from the Day of their Embarkation to proceed to the Place of their Destination.

And when Officers of Engineers shall be ordered Home from any Foreign Station, the extra Pay allowed them at such Stations is to be continued until their Arrival in England, the Payment of such Allowance to be made upon the Certificate of the Inspector-General.

Whenever an Engineer is permitted to quit his Station on Leave of Absence, his extra Pay shall cease until he returns to his Duty.

The Allowances of extra Pay granted to Officers of Our Corps of Royal Engineers by this Warrant are to be in Lieu of all other Allowances for Lodging, Fire, Candles, and for Travelling within Five Miles of the Place where they are stationed; but as it frequently happens that Officers of Engineers cannot procure Lodgings sufficiently near to the Works carrying on under their direction, and where there are Barracks unoccupied at the Time, We do hereby direct that in all such cases they may be accommodated with the use of the Barracks conformably to their respective Ranks, provided no additional Expence to the Ordnance or Barrack Department is thereby created, or that the Officer commanding Our Forces at such Station shall judge the same expedient for the general Good of Our Service.

And whereas you have represented unto Us that the Permanent Committee of the Royal Engineers at the Tower, as established by Our

former Warrants has not fully answered the Objects of its Institution, We do hereby direct that the Permanent Committee so ordered, and the Allowances thereby granted, do cease on the 30th Day of April Instant, and that in future all Plans and Estimates for the Construction, Repair, or Reform of Works be referred to the Inspector-General, or, in all cases where it may be deemed expedient, to a Committee of Engineers specially convened under the Authority of the Master-General for the Time being, and which said Committee shall report to the Master-General thereupon, previous to their being carried into Execution. And we do hereby direct that the said Committees shall assemble as Occasion may require, either at the Tower or at such other place as you or the Master-General for the Time being may judge expedient; and We do hereby further direct that you do grant to all Engineers assembled upon these Committees such an Allowance of extra Pay and Travelling Charges as may be an ample Reimbursement for any extra Expenses unavoidably incurred in the Performance of that Duty.

And whereas it may be necessary to employ some of Our Royal Engineers on Surveys, where the Duties are extremely laborious and the unavoidable Expences very great, We do hereby direct that in all such Cases the Allowances of extra Pay and Travelling Charges shall be proportionate to such Expences.

We do further direct that when any Officer of Our Corps of Royal Engineers is unable to attend such Duty as he may be called upon, and you or Our Master-General for the Time being shall judge from his Services that he is entitled to retire upon his Pay, you do place him on the Invalid Establishment in the same Rank as he holds in the Corps, if there is a Vacancy; or in case there is not a Vacancy for an Officer of that Rank his Name is to be entered in the Office of the Clerk of Our Ordnance, to succeed in his Turn to such Vacancy as may happen in the said Corps of Royal Invalid Engineers; and no Officer of Invalids whose Name is so registered in the Office of the Clerk of Our Ordnance shall at any Time after rise to a higher Rank in the Corps, or be called upon to serve again, except in cases of great Emergency, and then only in Great Britain.

And We do further direct that you cause the Expence of this new Establishment to be inserted in the Estimates of the Ordnance, to be from time to time presented to Parliament. And for so doing this shall be, as well unto you as to the Commissioners for Auditing the Public Accounts of the Kingdom, and to all other Our Officers and Ministers herein concerned, a sufficient Warrant.

Given at Our Court at *St. James's* this Twenty-first Day of *April*, 1802, in the Forty-second Year of Our Reign.

By His Majesty's Command,

PELHAM.

To our Right Trusty and Right Well-beloved Cousin and Councillor John, Earl of Chatham, K.G., Master-General of Our Ordnance.

Vide page 400.

GEORGE R.

Whereas we have thought it expedient to augment Our Corps of the Royal Engineers with three Captains, three Second Captains, six First Lieutenants and three Second Lieutenants so as to compleat the Corps in Number of Officers equal to three Battalions of Royal Artillery, We do hereby direct that the following Establishment of Our Corps of Royal Engineers shall take place on the 18th November, 1807, viz. :—

		Pay.					
		℔ Diem.			℔ Annum.		
		£	s.	d.	£	s.	d.
Colonel-in-Chief, the Master-General of Our Ordnance							
Colonel-en-Second, the Lieutenant-General of Our Ordnance ...	£ s.						
3 Colonels-Commandant	2 4 each	6	12	0	2,409	0	0
6 Colonels	1 4 „	7	4	0	2,628	0	0
9 Lieutenant-Colonels ...	0 17 „	7	13	0	2,792	5	0
3 ditto	0 15 „	2	5	0	821	5	0
30 Captains	0 10 „	15	0	0	5,475	0	0
30 Second Captains ...	0 10 „	15	0	0	5,475	0	0
60 First Lieutenants ...	0 6 „	18	0	0	6,570	0	0
30 Second Lieutenants ...	0 5 „	7	10	0	2,737	10	0
1 Brigade Major... ...	0 10 „	0	10	0	182	10	0
172	Total ...	79	14	0	29,090	10	0

And that the present Establishment of the Royal Invalid Engineers shall continue as provided for in Our Warrant bearing Date the 21st April, 1802.

(*The next clause repeats the appointment of I. G. F.*)

And whereas you have represented to Us that from the increased Duties of the said Inspector-General the Assistance of a Deputy-Inspector-General becomes necessary, we further direct that you do in like Manner select an Officer of Our Corps of Royal Engineers to perform the Duties of Deputy Inspector-General.

(*Then come clauses defining extra pay, all of which are like the former warrant excepting*)—

To the Officer performing the Duties of Deputy-Inspector-General, Thirty Shillings per Diem, (*and also*) unless he be of the Rank of Second Captain, when the Allowance of Seven Shillings per day Extra Pay is to be established (*abroad*); (*and also*) unless he be of the Rank of Second Captain, when the Allowance of Three Shillings per Day Extra Pay is to be established (*at home*).

(*The warrant repeats all the other clauses of that of* 1802, *and winds up with the following*)—

And whereas by Our Order bearing date the 9th January, 1807, We thought fit to approve that each of the Colonels-Commandant of the

Corps of Royal Engineers should receive from the 1st of that Month Two Hundred Pounds ℔ Annum in addition to their Pay upon the Establishment before mentioned; And also by Our Order bearing Date the 26th June, 1807, that each of the Colonels of the Corps should be paid from the 1st January of that year an Allowance of Two Shillings per Day to make up their net Pay Twenty-Six Shillings ℔ Day, We do further direct that you cause these Allowances, together with the Expence of the new Establishment, amounting to £31,317 per annum, to be inserted in the Estimates of the Ordnance. (*&c., &c.*)

Given at Our Court at *St. James's*, the Nineteenth Day of April, 1808, in the Forty-Eighth year of Our Reign.

By His Majesty's Command.

HAWKESBURY.

To our Right Trusty and Right Well-beloved Cousin and Councillor John Earl of Chatham, K.G., Master-General of Our Ordnance.

Vide page 400.

GEORGE, P.R.

Whereas We, in the name and on the Behalf of His Majesty, have thought it expedient to augment our Corps of Royal Engineers with two Colonels, one Lieutenant-Colonel, five Captains, five Second Captains, ten First Lieutenants, and five Second Lieutenants, so as to compleat the Corps in Number of Officers, equal to four Battalions of Royal Artillery, We do hereby direct that the following Establishment of our Corps of Royal Engineers shall take place from the first Day of the present Month, viz.:—

	Per Diem.			Per Annum.		
	£	s.	d.	£	s.	d.
Colonel-in-Chief, the Master-General of Our Ordnance						
Colonel-en-Second, the Lieutenant-General of Our Ordnance						
4 Colonels-Commandant at £1,000 per annum each	10	19	2	4,000	0	0
8 Colonels at £1 6s.	10	8	0	3,796	0	0
12 Lieutenant-Colonels at 17/-	10	4	0	3,723	0	0
4 ditto at 15/-	3	0	0	1,095	0	0
40 Captains at 10/-	20	0	0	7,300	0	0
40 Second ditto at 10/-	20	0	0	7,300	0	0
80 First Lieutenants at 6/-	24	0	0	8,760	0	0
40 Second ditto at 5/-	10	0	0	3,650	0	0
1 Brigade-Major at 10/- ...	0	10	0	182	10	0
229 Total ...	109	1	2	39,806	10	0

And that the Establishment of the Royal Invalid Engineers shall be as follows, in Lieu of that provided for in His Majesty's Warrant bearing Date the 21st April, 1802, viz.:—

		Per Diem.			Per Annum.		
229		£	s.	d.	£	s.	d.
	1 Colonel	1	6	0	474	10	0
	1 Lieutenant-Colonel	1	0	0	365	0	0
	1 ditto	0	17	0	310	5	0
	4 Captains, 10s. each	2	0	0	730	0	0
	1 Second Captain	0	10	0	182	10	0
	1 First Lieutenant	0	6	0	109	10	0
	1 Second Lieutenant	0	5	0	91	5	0
239		6	4	0	2,263	0	0
	Corps of Royal Engineers	109	1	2	39,806	0	0
	Corps of Invalid Engineers ...	6	4	0	2,263	0	0
	Total £	115	5	2	42,069	10	0

(*The remaining clauses of the Warrant are similar to the two preceding ones.*)

Given at Our Court at Carlton House, the thirteenth Day of May, 1811, in the fifty-first Year of Our Reign.

By the Command of His Royal Highness the Prince Regent, in the Name and on the Behalf of His Majesty,

R. RYDER.

To Our Right Trusty and well-beloved Councillor,
Henry Lord Mulgrave,
Master-General of our Ordnance.

Vide page 311.

In the Name and on the Behalf of His Majesty.

GEORGE, P.R.

Whereas you have represented unto Us that it would tend much to the Advantage of Our Service, if a general System were established for the Instruction of Our Corps of Royal Military Artificers, Sappers, and Miners, as well as the Junior Officers of Our Corps of Royal Engineers, in the Duties of Sapping, Mining, and other Military Field Works. We, in the Name and on the Behalf of His Majesty, do hereby approve of the annexed Establishment which you have stated to be necessary for conducting the Business of the proposed Instruction, and do authorize you to fix upon such Stations as you may consider most advantageous for carrying on the extensive Practice there to be performed. Our further Will and Pleasure is that you, or Our Master-General of Our Ordnance for the Time being, do from time to time select from our Corps of Royal Engineers and *(sic)* such Officers as from their Zeal and Abilities you may deem most competent to fill the Appointments of Director and Assistant-Director for the Purposes aforesaid. And whereas the Appointment and Duties of Director are of much

Importance, requiring a considerable Portion of Ability and Exertion on the Part of the Officer who may be entrusted therewith, We are, moreover, pleased in Order to give due Weight and Authority to such Officer, to grant to him the Rank of Major in our Army, from the Date of his Nomination to that Trust, provided he shall not have previously attained the said Rank. And We do also direct that you do cause the Amount of the aforesaid Establishment, together with the Expence of Materials, Tools, and other Articles required for the Operations to be carried on, to be inserted in the Ordnance Estimates, to be from time to time presented to Parliament; and for so doing this shall be, as well unto you as to the Commissioners for Auditing the Public Accounts of the United Kingdom and to all other Our Officers and Ministers herein concerned, a sufficient Warrant.

Given at Our Court at Carlton House, this Twenty-third Day of April, 1812, in the Fifty-second Year of Our Reign.

By the Command of His Royal Highness the Prince Regent,
in the Name and on Behalf of His Majesty.

(Signed) R. Ryder.

To Our Right Trusty and well-beloved Councillor,
Henry Lord Mulgrave,
Master-General of Our Ordnance.

Establishment and Pay.

One Director of Instructions for Field Works, an Allowance equal to his Ordinary Pay and his usual Home Extra Pay.

One Assistant-Director, an allowance equal to the Pay of Adjutant of the Royal Military Artificers together with the usual Home Extra Pay.

Forage Allowance for two Horses for the Director.

The usual Allowance for two Servants for ditto.

Forage Allowance for one Horse to the Assistant-Director.

The usual Allowance for one Servant to ditto ditto.

Non-Commissioned Officers as Assistant-Teachers, to an Allowance not exceeding from 1s. to 1s. 3d. or 1s. 6d. per Diem according to the Talents and Exertion of the Individual.

The Privates of the Royal Military Artificers, Sappers and Miners attending the Instructions to receive an Allowance not exceeding from 3d. to 6d., and 9d. ℔ Man ℔ Diem to cover the wear and tear of Clothes, Shoes, &c., and as an encouragement to exertion and good conduct.

One Clerk, having also charge of Stores, 7s. 6d. per Diem with Allowance of House Rent, Coals and Candles.

The Officers of Engineers attending the Instructions to be allowed the usual Home Extra Pay for such time as their actual Attendance is certified by the Director or Assistant-Director.

The Sub-Lieutenants of Royal Military Artificers, Sappers and Miners to be allowed 2s. per Diem for the time of their actual Attendance on Instruction, according to Certificate from the Director or Assistant-Director.

Vide page 400.

In the Name and on the Behalf of His Majesty GEORGE, P.R.

Whereas we have thought it expedient to augment our Corps of Royal Engineers with one Colonel-Commandant, one Colonel, six Lieutenant-Colonels, five Captains, five Second Captains, ten First Lieutenants, and five Second Lieutenants, We do hereby direct that the following Establishment of Our Corps of Royal Engineers shall take place from the Twenty-first Day of July, 1813, viz. :—

		Per Diem.			Per Annum.		
		£	s.	d.	£	s.	d.
	Colonel-in-Chief, the Master-General of Our Ordnance						
	Colonel-en-Second, the Lieutenant-General of Our Ordnance						
5	Colonels-Commandant, at £1,000 per annum each	13	13	11½	5,000	0	0
9	Colonels ... at £1 6 0 each	11	14	0	4,270	10	0
18	Lieutenant-Colonels at 0 18 1 „	16	5	6	5,940	7	6
4	ditto ... ... at 0 16 1 „	3	4	4	1,174	1	8
45	Captains ... at 0 11 1 „	24	18	9	9,102	3	9
45	Second ditto ... at 0 11 1 „	24	18	9	9,102	3	9
90	First Lieutenants at 0 6 10 „	30	15	0	11,223	15	0
45	Second ditto ... at 0 5 7 „	12	11	3	4,585	6	3
1	Brigade-Major... at 0 10 0 „	0	10	0	182	10	0
262	Total ...	138	11	6½	50,580	17	11

And that the Establishment of the Royal Invalid Engineers shall be as follows, in lieu of that provided for in Our Warrant, bearing date the Twenty-first Day of April, 1802, viz. :—

		Per Diem.			Per Annum.		
262		£	s.	d.	£	s.	d.
1	Colonel	1	6	0	474	10	0
1	Lieutenant-Colonel	1	0	0	365	0	0
1	ditto	0	18	1	330	0	5
4	Captains ... at 11s. 1d. each	2	4	4	809	1	8
1	Second Captain	0	11	1	202	5	5
1	First Lieutenant	0	6	10	124	14	2
1	Second Lieutenant	0	5	7	101	17	11
272		6	11	11	2,407	9	7
	Corps of Royal Engineers	138	11	6½	50,580	17	11
	Corps of Invalid Engineers ...	6	11	11	2,407	9	7
	Total £	145	3	5½	52,988	7	6

(*The remainder of the Warrant is similar to its predecessors.*)

Given at Our Court at Carlton House the Twenty-first Day of July, 1813, in the Fifty-third year of Our Reign.

To our Right Trusty and Right Well-beloved Cousin and Councillor, Henry Earl of Mulgrave, Master-General of Our Ordnance.

By the Command of His Royal Highness the Prince Regent, in the Name and on the Behalf of His Majesty.
SIDMOUTH.

Vide page 406.

In the Name and in the Behalf of His Majesty.

GEORGE, P.R.

Whereas We have thought fit that Our Corps of Royal Engineers should be reduced to the following Peace Establishment amounting to £47,135 7s. 11d. per Annum, to which are to be added certain permanent Allowances annexed to that Establishment amounting to £3,177 6s. 10d., making altogether the sum of £50,312 14s. 9d. per Annum.

		Pay.						Total.		
		℔ Diem each.			℔ Annum.					
		£	s.	d.	£	s.	d.	£	s.	d.
	Colonel-in-Chief, the Master-General of Our Ordnance									
	Colonel-en-Second, the Lieutenant-General of Our Ordnance									
4	Colonels-Commandant .	2	14	9½	4,000	0	0			
8	Colonels	1	6	3	3,832	10	0			
16	Lieutenant-Colonels ...	0	18	1	5,280	6	8			
4	ditto	0	16	1	1,174	1	8			
40	Captains	0	11	1	8,090	16	8			
40	Second Captains ...	0	11	1	8,090	16	8			
80	First Lieutenants ...	0	6	10	9,976	13	4			
40	Second ditto	0	5	7	4,075	16	8			
1	Brigade-Major	0	10	0	182	10	0			
233								44,703	11	8
	Establishment for Invalid Engineers the same as in Warrant for 21st July, 1813, viz.							2,431	16	3
243	Total ...							47,135	7	11

(*The other clauses are similar to those in the preceding Warrant.*)

Given at Our Court at Carlton House this 15th day of February, 1817, in the Fifty-seventh Year of Our Reign.

To our Right Trusty and Well Beloved Cousin and Councillor Henry, Earl of Mulgrave, Master-General of Our Ordnance.

By the Command of His Royal Highness the Prince Regent, in the Name and on the Behalf of His Majesty.
SIDMOUTH.

Vide page 407.

In the Name and on the Behalf of His Majesty.

GEORGE, P.R.

Whereas We have thought fit that the Peace Establishment of our Corps of Royal Engineers, bearing date the 15th February, 1817, should be reduced to the following Establishment, amounting to £41,088 11s. 3d. per Annum, to which are to be added certain Permanent Allowances annexed to that Establishment, amounting to £3,153 18s. 5d., making together the sum £44,242 9s. 8d. per Annum:—

		Pay.			Total.
		Per Diem each.	Per Annum.		
		£ s. d.	£ s. d.		£ s. d.
	Colonel-in-Chief, the Master-General of Our Ordnance				
	Colonel-en-Second, the Lieutenant-General of Our Ordnance				
4	Colonels-Commandant .	2 14 9½	4,000 0 0		
8	Colonels	1 6 3	3,832 10 0		
16	Lieutenant-Colonels . .	0 18 1	5,280 6 8		
4	ditto	0 16 1	1,174 1 8		
32	Captains	0 11 1	6,472 13 4		
32	Second Captains ...	0 11 1	6,472 13 4		
64	First Lieutenants ...	0 6 10	7,981 6 8		
32	Second ditto	0 5 7	3,260 13 4		
1	Brigade-Major	0 10 0	182 10 0		
193					38,656 15 0
	Establishment of Invalid Engineers the same as in Warrant of 21st July, 1813, viz.				2,431 16 3
203	Total ...				41,088 11 3

(*The other clauses are similar to those in the preceding Warrants.*)
Given at Our Court at Carlton House this 20th Day of March, 1819, in the Fifty-ninth year of Our Reign.

To Our Trusty and Right Entirely beloved Cousin and Councillor, Arthur Duke of Wellington, K.G., Master-General of Our Ordnance.

By the Command of His Royal Highness the Prince Regent, in the Name and on the Behalf of His Majesty.
SIDMOUTH.

INDEX TO VOLUME I.

Abbey, Lieutenant, in Holland, 368; killed at Bergen-op-Zoom, 374
Abraham, Heights of, at Quebec, 193
Academy, Royal Military, at Woolwich founded, 155
Adamson, Sub-Lieutenant, killed at Bergen-op-Zoom, 374
Adour, passage of, 352
Ailnoth, the Engineer, 10
Aland Islands, siege of Bomarsund, 420
Albert Magister, 10
Albuquerque, Duke of, at Cadiz in 1810, 269
Albuquerque, siege and capture of, 124
Alexander, C. C., in Crimea, 423; death of, 431
Alexandria, battle of, 231; siege of, 233
Algiers, bombardment of, 391
Alicante, defence and loss of, 134
Alien Priory, 28
Alma, battle of, 424
Almanza, battle of, 130
Almaraz, destruction of bridge at, 312
American War, the second, 357
Anderson, H., in Holland, 217, 223
Anderson, Lieutenant, Assistant Engineer, at capture of Quarries, Sebastopol, 455
Anderson, Lieutenant, at defence of Lucknow, 483; report on, 484
Anderson, Major, Chief Engineer at defence of Lucknow, 483; death of, 484
Anderson, Private A., with Burke on Danube, 417; gains Order of Medjidie, 418
Anderson, W. C., in Crimea, 436
Antwerp, attempt to destroy fleet at, 368; taken over from French, 376
Apperly, John, in India, 164
Appuhn, Lieutenant, King's German Engineer, 406
Archer, Captain, at Gibraltar, 75; siege of Minorca, 176; Havannah, 195; Belleisle, 198
Armit J. L. A., in Crimea, 450; wounded, 461
Armstrong, John, A.Q.M.G., in Flanders, 111; services there, 114; constructs Lines of Bouchain, 115; appointed Engineer on Establishment, 115; Commissioner to destroy fort at Dunkirk, 116; on Old and New Establishments, 139; Chief Engineer, 142; Q.M.G., 147; death of, 155
Armstrong, John, Junior, Engineer Extraordinary, 156; at L'Orient, 161
Armstrong, Thomas, 148; siege of Carthagena, 151; at L'Orient, 161
Arnold, J. R., in Egypt, 230
Artificers, Soldier, Company—see Royal Military Artificers
Artillery, separation of, from Engineers, 141
Attillator, 13, 14, 17
Augmentation of Engineer Corps, 172, 397, 398, 399, 400, 407, 408

Badajoz, description of, 288; first siege of, 289; raised, 291; second siege, 291; Christoval twice unsuccessfully assaulted, 293; raised, 293; third siege of, 295; attack on fort Picurina, 296; sortie, 296; trenches flooded, 297; capture of Picurina, 299; assault and capture of fortress, 302
Bainbrigge, Lieutenant, in Crimea, 450; killed, 450
Baird-Smith, at Delhi, 475
Balaklava, flank march to, 425; seizure of, 426
Ballard, J. A., at Silistria, 417
Bamburgh, Thomas, 13
Barcelo, Admiral, at Gibraltar, 80
Barcelona, siege of, 121; its capture, 123; French attack on, 125
Barker, John, 137; on New Establishment, 139
Barrossa, battle of, 271
Barry, Lieutenant, at San Sebastian, 336
Basset, Thomas, 172
Bastia, capture of, 220
Bastide, J. H., Engineer in Ordinary, 156; at siege of Louisburg, 157; at Minorca, 175; at second siege of Louisburg, 184
Bath, promotions in, 402; Mann's protest against, 403
Batteries, floating, at Gibraltar, 101
Battles—Steinkirk, 57; Almanza, 130;

Dettingen, 155; Falkirk, 159; Culloden, 161; Val, 163; Silleri, 194; Bunker's Hill, 203; Long Island, York Island, and Brooklyn, 204: Lannoy, 219; Alexandria, 231; El Hanka, 232; Maida, 237; Roleia, 244; Vimiera, 244; Corunna, 247; Talavera, 257; Busaco, 262; Barrossa, 271, Salamanca, 315; Vittoria, 331; Waterloo, 378; Alma, 424, Inkermann, 433
Baugh, J., in Flanders, 163
Baynes, C. S., in Crimea at Eupatoria, 422; killed, 452
Baynes, Captain, Assistant Engineer in Crimea, 437; wounded, 440
Beatson, Robert, 216
Behman, Cornelius Van, in Civil War, 46
Bell, Thomas, Sub-Engineer on Establishment, 61; in Newfoundland Train, 136
Belleisle, siege of, 198; MS. account of in R.A. library, 198
Belson, F. C., in Crimea, 450; died, 461
Bennet, John, 17
Bennet, Joseph, Engineer in Portugal Train, 119; at siege of Albuquerque, 124; at Gibraltar, 64; commended by Prince of Hesse, 66; made Chief Engineer of Gibraltar, 67; mission to Barbary, 67; correspondence with Board of Ordnance, 68
Bent, George, at Constantinople, 414; in attack on Sebastopol of June 18th, 457
Berensbach, Captain, King's German Engineer, 406
Bergen-op-Zoom, defence of, 163; assault on, 370; its failure, 374
Bernard de Gomme—see Gomme
Berwick, 13, 20, 31
Bewley, Ralph, 11
Bickerstaff, Leonard, 148, 156; in India, 164
Biddulph, Captain, Assistant Engineer in Crimea, 437
Birch, J. F., in Holland, 217; in Egypt, 230; Copenhagen, 243; Corunna, 247; Flushing, 249; Cadiz, 269; Barrossa, 272
Birch, J., Junior, at Cadiz, 270; Tarifa, 275
Birch, William, 216
Birch, Lieutenant, Assistant Engineer at Defence of Lucknow, 483
Bisset, Charles, at Bergen-op-Zoom, 164
Bizot, French general in Crimea, 429; disagrees with Burgoyne, 441; appeals to Paris, 444
Blakeney, General, at siege of Minorca, 176
Blanshard, Captain, at Washington, 358; New Orleans and Fort Bowyer, 359
Blood, Holcroft, Captain of Pioneers, 54; Second Engineer, 60; Commanding Flanders Train in 1702, 110; gallantry at Venloo, 111; commands Artillery at Blenheim and Ramilies, 112; his death, 113
Blunt, Charles, in Flanders Train, 111
Boddington, Agent to the Corps, 169
Bodley, Josias, 40
Bodt, John, Engineer in Flanders Train, 55, 61
Boileau, Major, at Jhansi, 494
Boitout, Lucas, Sub-Engineer on Establishment, 61; in Portugal Train, 119
Bolton, Lieutenant, in Holland, 377
Bomarsund, siege of, 420
Bonnycastle, Lieutenant, at Flushing, 249
Bontein, Archibald, 166
Bontein, William, at L'Orient, 161; in Flanders, 163; at Bergen-op-Zoom, 164; at second siege of Louisburg, 184
Bonus, Lieutenant, wounded at Jhansi, 495
Booth, William, at siege of Gibraltar, 85; charge of mines, 93; his drawings, 93; sent home insane, 94
Booth, William, 216
Boothby, C., in Calabria, 238; in Peninsula, 246; Corunna, 247; with Wellesley, 256; wounded at Talavera, 257
Borgard, Albert, Adjutant of Train, 61; Engineer in Train, 61; commanding Portugal Train, 119; wounded at Valenza, 123; and at Alcantara, 127; on New Establishment, 140; Colonel of Scotch Train, 145
Bos, Jan de, 44
Boteler, R., in South America, 242; Peninsula, 244; Corunna, 247; Flushing, 249; first siege of Badajoz, 289; San Sebastian, 336
Bourchier, E. F., at Constantinople, 414; in Crimea, 423; made Brigade-Major, 453; wounded, 459
Bousfield, Robert, siege of Gibraltar of 1727, 73, 147
Boyd, Major-General, at siege of Gibraltar, 80; created K.B., 106
Brabant, Henry, 61, 136
Braddock, General, disaster at Du Quesne, 171
Bramham, James, 55, 156; in Flanders,

162 ; at Belleisle, 198 ; made Chief Engineer and death, 217
Brand, quick eyesight of, at siege of Gibraltar, 98
Bray, Edmund, Travelling Cadet, 48
Brend, John, 27, 29
Brevet, first in Corps, 202
Brewse, John, 158, 166 ; at second siege of Louisburg, 184 ; Chief Engineer at second siege of Minorca, 209
Bridge, description of, for passage of Adour, 352
Bridges, George, 216
Brine, F., in Crimea, 461
Briscoe, Christopher, 70
Brocas, Arnold, 15
Brookes, John, 146
Brooklyn, battle of, 204
Brown, Lieutenant, at Flushing, 249
Browne, Major, in Civil War, 46
Browne, J. F. M., in Crimea, 450 ; at capture of Quarries, 454
Brownlow, Lieutenant, at Delhi, 477 ; wounded, 482 ; killed at Lucknow, 492
Brownrigg, J., in Egypt, 230
Bruce, Peter Henry, 158 ; pension to, 201
Bruce, Robert George, 172 ; at Rochefort, 182
Bruyeres, R. H., in Holland, 217, 222
Bryce, A., in Egypt, 230
Bucknell, W., in Holland, 217
Bunker's Hill, battle of, 203
Burgate, William, 23, 25
Burgess, Serjeant, at Kashmere Gate, Delhi, 479
Burgh, Thomas, Third Engineer of Ireland, 61 ; death of, 148
Burgos, siege of, 318 ; capture of hornwork, 319 ; failure of assault on outer line, 321 ; afterwards successful, 324 ; sortie, 325 ; failure on inner line, 327 ; siege raised, 327
Burgoyne, John Fox, at blockade of Malta, 230 ; in Egypt, 235 ; with Sir J. Moore in Peninsula, 246 ; under Wellesley, 256 ; description of passage of Douro, 257 ; of battle of Talavera, 257 ; at Busaco, 262 ; Lines of Torres Vedras, 264 ; Fort Concepcion, 268 ; Ciudad Rodrigo, 278 ; second siege of Badajoz, 291 ; letter on siege, 294 ; third siege of Badajoz, 296 ; Salamanca forts, 313 ; account of battle, 316 ; entry into Madrid, 316 ; capture of Retiro, 317 ; at Burgos, 319 ; journal of siege, 321 ; conduct at El Bodon, 331 ; account of battle of Vittoria, 331 ; San Sebastian, 336 ; passage of Adour, 354 ; New Orleans and Fort Bowyer, 359 ; paper on Waterloo, 383 ; Commissioner on French fortresses, 386 ; the Bath honours, 405 ; sent to Constantinople, 409 ; visit to Paris *en route*, 411 ; visit to Varna, 422 ; in Crimea, 423 ; account of Alma, 423 ; flank march to Balaklava, 425 ; accused of delay, 434 ; disagrees with Bizot, 441 ; dispute referred to Paris, 444 ; recalled home, 444 ; issues Corps order on leaving Crimea, 448
Burke, Lieutenant, sent to Gallipoli, 410 ; to Danube, 412 ; killed, 417
Burney, Lieutenant, at Tarifa, 275
Burton, Lieutenant, at relief of Lucknow, 487 ; capture of Lucknow, 490
Busaco, battle of, 262
By, Captain, first siege of Badajoz, 289 ; second siege of Badajoz, 291
Byker, W., 15
Byng, Admiral, at Minorca, 179

Caddy, John, 216
Cadiz, attack on, its failure, 118 ; blockade of, by French, 269
Cadsule, Francis, Engineer in Channel Train, 56
Calais, 15, 23
Calder, Lieutenant, at Flushing, 249
Calvi, siege of, 221
Cambon, Colonel du, 59
Cameron, Major, Assistant Engineer in Crimea, 437 ; wounded, 440
Campbell, A., removed to Indian list, 201
Campbell, Charles, 148
Campbell, Dougal, 156 ; in Scotland, 158 ; Culloden, 161 ; Chief Engineer in Flanders, 162
Campbell, James, 166
Campbell, John, 215
Campbell, Major, Assistant Engineer in Crimea, 457
Canton, attack on, 501 ; escalade of, 503 ; destruction of forts, 504 ; contractors at, 505
Cape of Good Hope, capture of, 241
Captain-Lieutenants made Captains, 202
Cardew, G., in Egypt, 230 ; Flushing, 249
Carles, Peter, Engineer in Channel Train, 56 ; Colonel and Chief Engineer of Spanish Train, 117 ; his character, 117 ; at Cadiz and Vigo, 118 ; placed on Establishment, 123 ; joins Portuguese

service, 112 ; on Old Establishment, 139
Carleton, Captain George, his memoirs, 120
Carleton, Colonel, killed at Bergen-op-Zoom, 373
Carmichael, Serjeant, at Kashmere Gate, Delhi, 479
Carnegie, Lieutenant, at Delhi, 477 ; wounded, 482 ; at siege of Lucknow, 490
Carter, Lieutenant, in Crimea, 450 ; killed, 450
Cassall, George Conrade von, 61
Cementarii, 11
Chalmers, Lieutenant, Assistant Engineer at relief of Lucknow, 487
Champain, Lieutenant J., at Delhi, 477 ; wounded, 482 ; at capture of Lucknow, 489
Chapman, Captain, Assistant Engineer in Crimea, 437 ; killed, 464
Chapman, Frederick R., at Gallipoli, 410 ; in Crimea, 423 ; on June 18th, 457
Chapman, Stephen Remnant, in Holland, 222 ; Copenhagen, 243 ; in Peninsula, 256 ; Torres Vedras, 261 ; Busaco, 262
Chardellan, Jean, Engineer in Channel Train, 56 ; on half-pay list, 139
Chardeloup, John, in Spanish Train, 128
Charlestown, siege of, 206
Charter, Francis and Edward, 44
Chayter, Henry, in Flanders Train, 111
Cheese, Captain, 46
Cherbourg, attack on, 184
Chesney, Lieutenant G., at Delhi, 477 ; wounded, 482
Cheyne, A., at Corunna, 247
Chilcot, John, 216 ; in West Indies, 220
China War in 1841, 500 ; in 1857, 502
Christoval fort at Badajoz, 290, 292
Clayton, Colonel, Lieutenant-Governor of Gibraltar, at siege in 1727, 72
Clerk, Matthew, 173
Clerk, Robert, expedition to L'Orient, 161 ; in Flanders, 162 ; taken prisoner at Bergen-op-Zoom, 164 ; at Rochefort, 182
Clerke, Captain, at capture of Lucknow, killed, 493
Colby, Lieutenant, at Flushing, 249
Cole, Sir Henry, 2
Cole, Lieutenant, in Holland, 377
Collier, Theodore, Adjutant, afterwards Major of Barcelona Train, 119 ; commands Portugal Train, 128, 141
Collyer, G., at Copenhagen, 243 ; San Sebastian, 336 ; killed, 346
Colonels-Commandant, promotion to, 400
Comburn, William, 146
Comptroller of Fortifications, 43
Concepçion Fort, destruction of, 268
Connall, Corporal, at Péronne, 384
Conrade, George, Engineer in West Indies, 137 ; in Channel Train, 56
Contractors at Canton, 505
Cooke, Captain A. C., in Crimea, 461
Cooke, William, 166
Cooper, Lieutenant, in Holland, 368
Cooper, R., in Holland, 217
Copenhagen, siege of, and capture of Danish fleet, 243
Corneille, John, 141
Corneille, Rudolph, Second Engineer of Ireland, 61
Cornwallis, correspondence about Hay, 223 ; about Corps, 398
Corsica, capture of, 220
Corunna, battle of, 247
Courtney, E. H., in China War, of 1860, 511
Couture, Peter, 216
Coventry, Richard, 19
Covey, Lieutenant, in Holland, 377
Cowell, John, A.D.C. to General Jones at Bomarsund, 419 ; in Crimea, 444 ; secures Russian flag, 466
Cowley, William, Engineer Extraordinary, 156 ; at siege of Louisburg, 157
Cowper, Captain, killed at Canton, 502
Cox, Captain, at capture of Lucknow, 489
Crabbe, Sir J., 14
Craigie, A. D., at Varna, 422 ; in Crimea, 423 ; killed, 450
Cranveldt, John Van, 43
Cray, Private, Royal Sappers and Miners, 412 ; distinguishes himself at Varna fire, 419
Creyke, A. J., at Varna, 412 ; in Crimea, 424 ; invalided, 440
Crillon, Duc de, at siege of Gibraltar, 98
Crimea, invasion of, 422
Crofton, G. St. J., in Crimea, 437; killed, 454
Crommelin, Captain, at defence of Lucknow, 487
Crown Jewels, robbery of, 54
Culloden, battle of, 161
Culpepper, Thomas, Engineer in Ordinary, 49
Cumberland, Captain, at destruction of Sebastopol docks, 471
Cunningham, William, Engineer in Ordinary, 156 ; at Minorca, 175 ; Chief Engineer in West Indies and death there, 189

D'Agnecourt, John André, in Spanish Train, 128

Da Costa, A. F. H., at Hong Kong, 500; gallantry at Canton and murder of, 501
Dakeyne, Captain, Assistant Engineer in China War of 1860, 511
Dalem, Peter Manteau Van, in Civil War, 46
Darby, Admiral, relief of Gibraltar, 94
Darcourt, Oliver, Engineer in Channel Train, 56
D'Arcy, Robert, at second siege of Minorca, 209, 216; Copenhagen, 243; Walcheren, 248
Darrah, Lieutenant, in Crimea, 454
D'Aubant, Abraham, 189; in Corsica, 220
Davies, Roger, Engineer in Portugal Train, 127-141
Davis, Serjeant, assists to rescue Captain Lewis at San Sebastian, 340
Davy, H., in Peninsula, 246; killed at Betanzos, 247
Dawson, Captain, in Crimea, 454
Dawson, Richard, 165
Day, Joseph, 147
Debbieg, Hugh, at L'Orient, 161; in Flanders, 163; at second siege of Louisburg, 184; at Quebec with Wolfe, 190
De Butts, Augustus, at Corsica, 220
Delamain, Richard, 47
Delhi, description of, 475; siege of, 477; blowing in Kashmere Gate, 479; capture of, 482
De Moleyns, Captain, in Crimea, 454; on June 18th, 457
Denia, siege of, 130; loss of, 134
De Salaberry, Lieutenant, at Ciudad Rodrigo, 279; third siege of Badajoz, 296; killed at assault, 305
D'Estaing, Count, at Gibraltar, 92
Dettingen, battle of, 155
De Vere, F. H., in Crimea, 423
Dick, Lieutenant, killed at Jhansi, 495
Dickens, Samuel Trevor, 216
Dickinson, Captain, in South America, 242; Flushing, 249; Torres Vedras, 261; first siege of Badajoz, 289; killed, 290
Digges, Leonard, 34
Dirom, Lieutenant, at Hong Kong, 502
Dixon, Matthew, 155, 156; in India, 164; at second siege of Louisburg, 184; Havannah, 195
Dixon, Matthew, junior, at Fort Detroit, 357
Dominica, loss of, 205
Donnelly, J. F., in Crimea, 424; June 18th, 457; secures cemetery, 459
Douglas, J. R., at second siege of Minorca, made prisoner, 213, 216; in West Indies, 220
Douro, passage of, 257
Dowse, Richard, 216; in West Indies, 220
Drake, J. M., in Crimea, 436; his gallantry, 442; at Kertch, 454
Draper, Sir W., Lieutenant-Governor at second siege of Minorca, 209; his charges against the Governor, 211
Drebel, Cornelius, 43
Dress in 1782, 226
Drinkwater, siege of Gibraltar, 82 *et seq.*
Drosselin, attack on, 12
Dubois, Nicholas, in Flanders Train, 111; on half-pay list, 139
Du Cane, F., in Crimea, 461
Dudgeon, Richard, 166; at Rochefort, 182; at second siege of Louisburg, 184
Duff, Admiral, at Gibraltar, 81
Dumaresq, W. H., in Crimea, 461
Dundas, David, 172
Dundas, Hon. R., in Holland, 222; in Egypt, 230
Dundas, William, 172; reconnaissances in 1756, 174
Dungan, John, 46
Dunkirk, demolition of fortifications, 116
Durand, Peter, in Spanish Train, 128; commands Train for Minorca, 132; dies at Gibraltar, 69
Durnford, Andrew, 215
Durnford, Augustus, 172; at Rochefort, 183; at second siege of Louisburg, 184; Havannah, 195; Belleisle, 198
Durnford, Edward, at Hong Kong, 500
Durnford, Elias, 189; at Mobile, 207; in West Indies, 220
Durnford, Elias, junior, in West Indies, 220
Dury, Theodore, Engineer in Channel Train, 56; in Scotland, 145; in North Britain, 146
Dysen, G., in Holland, 222

Edwardes, Talbot, Travelling Engineer, 54; at Gibraltar, 65; Chief Engineer, Barbados, 136; on Old Establishment, 139; Portsmouth, 145
Edwards, Lieutenant, at Jhansi, 496
Eiser, John Christian, 181; at Rochefort, 183
El Boden, Burgoyne's conduct at, 331
El Hanka, battle of, 232
Eliott, George Augustus, in Flanders Train, 155; Engineer Extraordi-

nary, 156; at Havannah, 195; Governor of Gibraltar at siege, 79; created Baron Heathfield, 106
Ellicombe, Lieutenant, at Ciudad Rodrigo, 281; third siege of Badajoz, 296; Vittoria, 332; San Sebastian, 336
Elliot, Lieutenant, at Ciudad Rodrigo, 281; third siege of Badajoz, 296
Elphinstone, Hon. John, Practitioner Engineer, 156; in Scotland, 158; Culloden, 161
Elphinstone, Howard, in South America, 242; in Peninsula, 243; at Roleia, 244; at passage of Adour, 353
Elphinstone, Howard C., in Crimea, 431; at Quarries, 454; gains V.C., 460
Elton, Lieutenant, New Orleans and Fort Bowyer, 359
Emmett, A., in Peninsula, 256; first siege of Badajoz, 289; second siege of Badajoz, 292; third siege of Badajoz, 296; New Orleans and Fort Bowyer, 359
Engaine, Richard. 8
Engineer Establishment—see Establishments
Engineers—Quarters at Gibraltar, 76; Principal and Inferior rules for, 49; Corps formed, 143; Instructions for, 149; Dutch, for America, 160; Invalid Establishment, 213; attached to Divisions in Peninsula, 331; memorial for increase of pay, 349
English, F., at Roleia and Vimiera, 244; at Corunna, 247
Esla, pontoon bridge across, 331
Establishment in 1647, 60; 1698, 60; 1714, 139; 1722, 147; 1730, 148; 1744, 156; 1748, 165; 1755, 172; 1759, 188; 1782, 202; 1784, 213; 1819, 407
Eupatoria, occupation of, 422
Evans, Corporal, swims to Santa Clara at San Sebastian, 342
Evatt, H., in Holland, 223
Evelegh, John, at siege of Gibraltar, 85, 215
Ewart, C. B., at Constantinople, 411; in Crimea, 423
Exhibition, International, of 1851, 2
Extra Pay, first establishment of, 214
Eyre, Lieutenant, in Holland, 368
Eyre, Thomas, 166
Eyre, William, Practitioner Engineer, 156; at Culloden, 161; in Flanders, 162

Falkirk, battle of, 159
Fanshawe, E., at Cape of Good Hope, 241; in South America, 242; Flushing, 249
Faris, W , at Waterloo, 379
Faviere, Maximilian de, in Spanish Train, 129; half-pay list, 139
Fenner, Edward, 155, 156
Fenwick, Captain, at Jhansi, 494
Festing, Lieutenant, at Jhansi, 496
Fiddes, J., at second siege of Minorca, 209, 216; in West Indies, 220
Filgate, Lieutenant, in China War of 1860, 511
Finlay, J., in Holland, 222
Fisher, A. A'C., in Crimea, 454; June 18th report, 458; Hong Kong, 502; attack on Peiho forts, 507; China War of 1860, 511
Fisher, Benjamin, 215
Fleming, John, 166
Fletcher, Richard, in West Indies, 220; Mission to Turkey, 229; in Peninsula, 256; Torres Vedras, 260; Ciudad Rodrigo, 280; first siege of Badajoz, 289; second siege of Badajoz, 291; third siege of Badajoz, 295; wounded at sortie, 297; returns to Peninsula as a Baronet, 331; Vittoria, 332; Pamplona, 333; San Sebastian, 336; killed, 346
Floating batteries at siege of Gibraltar, 101
Flushing, siege of, 249; destruction of docks, 254
Foord, Lieutenant, Assistant Engineer in China War of 1860, 511
Forbes, Alexander, in Flanders Train, 111; in Barcelona Train, 119; in New England, 137
Forbes, Lieutenant, at Delhi, 477; wounded, 482; capture of Lucknow, 490
Ford, W., in Holland, 217; in Egypt, 230
Forster, W., in Peninsula, 246; Corunna, 247; with Wellesley, 256; Torres Vedras, 261; Ciudad Rodrigo, 289; second siege of Badajoz, 292; killed, 292
Fournier, Adam Gabriel, 166
Fox, Lieutenant, wounded at Jhansi, 495
Frazer, Andrew, 189, 215
French view of Royal Engineers, 5
Frodsham, Henry, 46
Fulford, Lieutenant, at Delhi, 477; capture of Lucknow, 490; died of exposure, 482
Fulton, Captain, at defence of Lucknow, 483; killed, 484
Fyers, E., in Peninsula, 256
Fyers, F., at Corunna, 247; Walcheren, 248
Fyers, William, at New York, 204, 216

Galway, Earl of, commands expedition to Portugal, 124
Gangreben, Captain, King's German Engineers, 406
Garth, George, 173; second siege of Louisburg, 184
Geneste, Lieutenant, at Delhi, 477; died of exposure, 482
Geoffrey the Engineer, 9
Gerard the Engineer, 11
Gerard of Mayak, 13
German Engineers, King's, 405
Gibb, E. G., arrives in Crimea, 436; invalided, 450
Gibraltar, capture of, 63; first siege of, 64; siege raised, 66; second siege, 72; description of fortress, 79; third siege, 82; estimate of cost, 107
Gilbert, F. Y., at Vittoria, 332; Waterloo, 378
Giles, Master, 16
Gipps, Lieutenant, third siege of Badajoz, 296
Glenie, James, 216
Glover, Thomas, Engineer in Flanders Train, 55
Gobett, John, Engineer in Channel Train, 56
Goldfinch, H., at Copenhagen, 243; Peninsula, 256; Torres Vedras, 261; Busaco, 262; Vittoria, 332; Pamplona, 333; on award of medals, 404
Gomme, Bernard de, 43; in Civil War, 45, 47; Chief Engineer, 49; death of, 53
Goodall the Engineer, 34
Goodfellow, Lieutenant C. A., at Jhansi, 496; gains V C., 499
Gordon, Charles George, in Crimea, 437; assault of June 18th, 457; destruction of Sebastopol docks, 471; at destruction of Summer Palace at Pekin, 515
Gordon, Harry, in Flanders, 163; with Braddock, 171; Martinique, 195; Havannah, 195
Gordon, J. W., in Crimea, 423; wounded, gallantry of, 448; Kertch, 454; assault on June 18th, 457; destruction of Sebastopol docks, 471
Gordon, William, 216; in Holland, 217
Gosset, A., in Holland, 222
Gossett, Lieutenant, at Oswego, 358; at Algiers, 392
Gossett, Lieutenant, at Jhansi, 495
Graham, C., in Egypt, 230
Graham, Gerald, in Crimea, 423; assault of June 18th, 457; gains V.C., 460; destruction of Sebastopol docks, 470; in China War of 1860, 511
Graham, Sir Thomas, at Barrossa, 271; San Sebastian, 340
Grain, E. M., in Crimea, 437; invalided, 450
Graves, J. M., in Crimea, 423; killed, 459
Grayme, Patie, 23
Greathed, Lieutenant, at Delhi, 477; wounded, 482
Green, Mr., journal of siege of Gibraltar, 82 *et seq.*; death of, 107
Green, William, in Flanders, 156; L'Orient, 161; Flanders, 162; Quebec with Wolfe, 190; Belleisle, 198; Chief Engineer at Gibraltar, 76; at siege, 82; Brigadier-General, 95; Major-General, 97; Baronet, 106
Green, William, junior, 189
Grenil, John, 139; in Scotland, 145; Medway, 146
Greyndon, Sir John, 17
Gruynard, John, 15
Guadaloupe, capture of, 189
Gually, Pierre de, in Portugal Train, 119
Gulliver, Lieutenant, at Delhi, 477; wounded, 482; capture of Lucknow, 489
Gundulf, Bishop, 9

Haddington, siege of, 28
Haldane, H., prisoner at Yorktown, 207, 215
Hale, Major, Assistant Engineer in Crimea, 437
Hall, Lieutenant Assistant Engineer, at relief of Lucknow, 487
Hall, William, in Flanders, 163
Hamilton, G., in Peninsula, 256; wounded at passage of Douro, 257
Handfield, E., in Holland, 222; in Egypt, 230
Hansard, Richard, 40
Hanway, John, Chief Engineer at Gibraltar, 70; in Flanders Train, 111; Barcelona Train, 119; West Indies, 137; on New Establishment, 139
Hardesty, John, 156
Harfleur, siege of, 16
Hargrave, John, 177
Harness, H. D., capture of Lucknow, 489
Harrington, Sir John, 25
Harris, Captain, in Holland, 377
Harrison, Lieutenant R., capture of Lucknow, 489; China War of 1860, 511
Hartcup, Thomas, 215

Hassebroick, Captain, King's German Engineer, 406
Havannah, siege of, 195
Havre, siege of, 33
Hawkins, Francis, Sub-Engineer on Establishment, 61 ; in Spanish Train, 118 ; on New Establishment, 139, 140 ; Newfoundland Train, 136 ; Bahamas, 138
Hay, Lewis, siege of Gibraltar, 85, 216 ; West Indies, 220 ; Holland, 222 ; Cornwallis correspondence about, 223 ; killed in Holland, 224
Hayes, C., in Holland, 223 ; in Egypt, 230
Hayter, Lieutenant, in Holland, 368
Head, F. B., at Waterloo, 378
Heath, John, in Flanders, 162
Heath, Joseph, 188 ; at Belleisle, 198
Heath, Thomas and Richard, 44
Henderson, Captain, at San Sebastian, 336
Herbert, Humphrey, 147
Herriot, Charles, 173
Hesse Darmstadt, Prince of, 63, 65
Hockings, Richard, 216
Hodel, Richard, 17
Hodson, Benjamin, 46
Holloway, Charles, diary of siege of Gibraltar, 80, *et seq.* ; Brigade-Major, 95 ; A.D.C., 97, 216 ; Mission to Turkey, 229 ; march across desert, 231 ; battle of El Hanka, 232
Holloway, Lieutenant, at Torres Vedras, 261 ; third siege of Badajoz, 296
Home, F., in China War, of 1860, 511
Home, Lieutenant, at Delhi, 477 ; blowing in Kashmere Gate, 479 ; accidentally killed, 481
Hooper, Captain, Engineer Extraordinary in Civil War, 46
Hope, Sir John, commands at Passage of Adour, 354
Horneck, W., on New Establishment, 139 ; in Scotland, 145 ; Engineer Extraordinary, 155 ; Chief Engineer at Gibraltar, 70
Hoste, G. C., in Egypt, 235 ; Calabria, 236 ; Holland, 367 ; Waterloo, 378
Hotham, Lieutenant, at Algiers, 392
Hovenden, Lieutenant, at Delhi, 477 ; wounded, 482 ; capture of Lucknow, 489
Hughes, P., in Corsica, 220
Hulme, Lieutenant, at Torres Vedras, 261 ; second siege of Badajoz, 292
Humfrey, John, 216
Humphrys, Thomas, 44
Hunt, Lieutenant, first siege of Badajoz, 289 ; second siege of Badajoz, 292
Hutchinson, Lieutenant, Flushing, 249
Hutchinson, Lieutenant, defence of Lucknow, 483 ; capture of Lucknow, 490
Hylton, Edward, 174

I'Ans, T. R., in Holland, 217
Ince, Serjeant-Major, proposal to form galleries in rock at Gibraltar, 99, 100
Indian Engineers removed from British list, 201
Inglis, W. M., in Crimea, 424 ; drowned, 435
Inkermann, battle of, 433
Innes, Lieutenant, gains V.C., 493
Inspector-General of Fortifications created, 399
Instructions for Engineers, 149
International Exhibition of 1851, 2
Invalid Engineers, Warrant establishing, 213 ; abolition of, 407
Ireland, Ordnance Survey of, 407
Irish Train, 48
Irwin, General, his correspondence about Engineer Quarters, 76
Isla de Leon at Cadiz, 270

James, E. R., in Crimea, 450 ; assault of June 18th, 457 ; prisoner, 461
Jameson, Lieutenant R., A.D.C. to General Jones, in Crimea, 444
Jenner, Edward, in India, 164
Jersey, attack on, by French, 207
Jesse, Captain, in Crimea, 454 ; killed, 459
Jhansi, description of, 494 ; capture of, 495
Johnson, Bernard, 43
Johnson, John, third siege of Gibraltar, 85-216 ; in Holland, 217
Johnson, James, in Barcelona Train, 119
Johnson, Rowland, 29
Johnson, W., at second siege of Minorca, 209
Johnston, William, at third siege of Gibraltar, 216, in West Indies, 220
Jones, H. D., at Flushing, 249 ; Cadiz, 269 ; third siege of Badajoz, 296 ; Vittoria, 332 ; San Sebastian, 336 ; wounded and prisoner, 339 ; New Orleans and Fort Bowyer, 359 ; Brigadier-General at Bomarsund, 419 ; in Crimea, 444 ; wounded, 459 ; at assault of September 8th, 464 ; despatch at close of siege, 466 ; second despatch on Subalterns, R.E., 467
Jones, J. T., in Calabria, 236 ; Corunna

247 ; Flushing, 249 ; Torres Vedras, 261 ; description of Lines, 264 ; Ciudad Rodrigo, 281 ; narrow escape, 285 ; first siege of Badajoz, 289 ; second siege of Badajoz, 292 ; third siege of Badajoz, 296 ; letters to his brother, 298-301 ; Burgos, 319 ; assault on hornwork, 320 ; Lord Wellington's quarters, 322 ; wounded, 325 ; on field of Waterloo with Wellington, 382 ; at Netherland fortresses, 387 ; at the Hague in 1830, 389
Jones, Rice, in South America, 242 ; in Peninsula, 256 ; Torres Vedras, 260 ; Busaco, 262 ; Ciudad Rodrigo, 281 ; first siege of Badajoz, 289 ; second Badajoz, 292
Jones, Lieutenant, at defence of Lucknow, 483
Jones, Lieutenant W., at Delhi, 477 ; killed, 482
Judge, Lieutenant, at capture of Lucknow, 490
Junot, at Vimiera, 245

Kars, defence of, 472
Kay, Lieutenant, in Holland, 377
Keane, The Hon. H. F., in Crimea, 437
Keith, Lieutenant, at capture of Lucknow, 489
Kelsall, Lieutenant G. N., in Crimea, 461
Kennett, G., in Egypt, 230 ; at Cape of Good Hope, 241 ; in South America, 241 ; killed at Buenos Ayres, 241
Ker, Lieutenant, in Holland, 377
Kertch, expedition to, 454
Kesterman, W., at New York, 204 ; in West Indies, 220
Kinburn, expedition to, 472
King, Captain F. W., at Bomarsund, 419 ; in Crimea, 437 ; killed, 454
King, Richard, in Flanders Train, 111 ; in Canada, 138 ; on Old Establishment, 139
King's Company of Engineers, 60 ; disbanded, 61
King's German Legion, Engineers, 405
Knyvett, Sir A., 26
Kuffler, Abraham, 43

Labouchere, President of Board of Trade, 2
Lacy, T., in Holland, 217 ; mission to Turkey, 229
Lake, Lieutenant-Colonel at Kars, 472 ; rewards for, 473
Lambert, Captain, killed at Namtow, 506
Lambert, Michael, 44
Lamerston, H., in Channel Train, 56
La Mouline, killed at Tortosa, 131
Landmann, G., in Peninsula, 244 ; at Roleia and Vimiera, 244 ; recollections of, 244 ; Cadiz, 269
Lands, Helier, 136
Lang, Lieutenant, at relief of Lucknow, 487
Langara, Don Juan de, at Gibraltar, 88
Lannoy, battle of, 219
Lanyon, John, Chief Engineer in Civil War, 45-47
Laprimaudaye, Peter, second siege of Gibraltar, 73
Lascelles, Lieutenant, at Flushing, 249 ; Ciudad Rodrigo, 281 ; third siege of Badajoz, 296 ; killed at assault, 305
Lascelles, Thomas, in Flanders Train, 111 ; Commissioner for demolishing fortifications of Dunkirk, 116 ; on New Establishment, 139 ; in Scotland, 145 ; D.Q.M.G., 147 ; Chief Engineer, 155 ; retires, 168
Lathom, Robert, at Minorca, 133
Laughton, Major, at Delhi, 477
Lawson, Douglas, in West Indies, 220
Leahy, Lieutenant A., in Crimea, 423 ; Quartermaster, afterwards D.A.Q.M.G., 442
Leake, Sir John, at Gibraltar, 64 ; relieves Barcelona, 126
Le Breton, E., in Holland, 222
Lee, Richard, the Holy-rood Font, 23, 26, 30 ; death of, 34
Leep, Francis, 140
Lees, James, 216
Lefanu at Belleisle, 198
Lefebure, C., in Holland, 217 ; Calabria, 236 ; Corunna, 247 ; Cadiz, 269 ; killed at Matagorda, 270
Leitch, Colour-Serjeant, gains V.C., 469
Leith, 23 ; siege of, 32
Lempriere, Lieutenant, at Algiers, 392
Lempriere, G., in Crimea, 431 ; invalided, 440
Lendrim, Corporal W., gains V.C., 469
Lennox, W. O., in Crimea, 431 ; gains V.C., 435 ; Adjutant, 453 ; relief of Lucknow, 487 ; capture of Lucknow, 489
Lewis, G. C., in Calabria, 236 ; San Sebastian, 336 ; wounded, 340
Lianne river, 27
Lilly, Christian, in Channel Train, 56 ; in West Indies, 59 ; Engineer on Establishment, 61 ; Third En-

gineer, 61 ; at Jamaica, 136 ; on Old Establishment, 139 ; in Plymouth Division, 146
Lillyman, Lieutenant, removed to Indian from British list, 201
Limond, Lieutenant, at relief of Lucknow, 486
Lines of Torres Vedras—*see* Torres Vedras
Lloyd, Sir Charles, 45 ; Chief Engineer, 47
Lloyd, Sir Godfrey, 45
London, defence of, in 1745, 159
Longhaw, John, 17
Long Island, battle of, 204
Long, Lieutenant, at Delhi, 477
Long, Walter, travelling Cadet, 48
Longley, J., at Flushing, 249 ; Cadiz, 269 ; Tarifa, 273 ; killed, 275
Longley, Lieutenant, at Hong Kong, 502 ; wounded at Peiho forts, 507
Louisburg, first siege of, 156 ; second siege of, 184
Loup, Thomas, 47
Lovell, J. W., in Crimea, 423
Lowry, Lieutenant J. G., in Crimea, 437 ; killed, 454
Lucknow, defence of, 483 ; mining operations, 585 ; relief by Outram and Havelock, 486 ; final relief by Sir C. Campbell, 487 ; siege of, 489 ; capture of, 491
Lugard, Colonel, C.R.E., at Hong Kong, and death, 502
Lyon, John, 46

Macaulay, J. S., at Cadiz, 270 ; Barrossa, 272
McCarthy, Captain, escalade of Castle of Badajoz, 307
McCullagh, Lieut., at Ciudad Rodrigo, 281
McDonald, Lieutenant, at Flushing, 249
McDonald, Serjeant, gallantry of, 452 ; gains V.C., 468
Machell, Lieutenant, at San Sebastian, 336 ; killed, 339
Mackelcan, John, 216
Mackellar, Patrick, Engineer Extraordinary, 156 ; with Braddock, 171 ; at second siege of Louisburg, 184 ; at Quebec, with Wolf, 190 ; Martinique, 195; Havannah, 195 ; Chief Engineer at Minorca, 200 ; death of, 201
Mackerras, W., at third siege of Gibraltar, 85, 216 ; in Holland, 223 ; killed in Egypt, 230
Macleod, G., in Calabria, 236 ; Flushing, 249 ; Ciudad Rodrigo, 281 ; first siege of Badajoz, 289 ; second siege of Badajoz, 292 ; third siege of Badajoz, 296
MacNeill, Lieutenant, at capture of Lucknow, 490
Madrid, entry into and capture of Retiro, 316
Maida, battle of, 237
Maitland, Lieutenant, at Hong Kong, 502 ; Peiho forts, 507 ; in China war of 1860, 511
Malcolm, Lieutenant, at relief of Lucknow, 487 ; at capture of Lucknow, 489 ; in China war of 1860, 511
Malta Opera-house, rebuilding of, 3
Malton, William, 216
Mamelon—*see* Sebastopol, siege of
Manley, John, 44
Mann, Gother, at Dominica, 205 ; in Holland, 217 ; protest about honours of Bath, 403
Mann, G. F., at Hong Hong, 502 ; in China war of 1860, 511
Manson, John, 166
Marcelle, Lewis, at Culloden, 161
Marr, John, 189-215
Marshall, Lieutenant, at Ciudad Rodrigo, 281; second siege of Badajoz, 292 ; Vittoria, 332 ; San Sebastian, 336
Martin, C. N., in Crimea, 423 ; wounded, 440
Martinique, attack on, 189 ; capture of, 195
Mary Rose, loss of, 27
Mascarine, Paul, 147
Massey, John, in Portugal Train, 119, 141 ; at Gibraltar, 65
Master of Ordnance, 41
Matagorda fort at Cadiz, 270
Matson, E., at Vittoria, 331; San Sebastian, 336; New Orleans and Fort Bowyer, 359
Matthew, Thomas, 17
Mauclere, John, 61 ; in Portugal Train, 119 ; Colonel of Train, 123 ; killed at Alcantara, 127
Maunsell, John, 42, 44, 45, 47
Maunsell, Lieutenant, at Delhi, 477 ; wounded, 482 ; capture of Lucknow, 490
Medals, on award of, by Goldfinch, 404
Medley, Lieutenant, wounded at Delhi, 482
Meiklejohn, Lieutenant, killed at Jhansi, 495
Meineke, Lieutenant, King's German Engineer at Flushing, 249 ; first siege of Badajoz, 289 ; second siege of Badajoz, 292 ; reduced, 406
Melhuish, Lieutenant, third siege of Badajoz, 296 ; Passage of Adour, 354

Melville, Lieutenant, first siege of Badajoz, 289 ; killed, 290
Mendoza, Don Joachim, at Gibraltar, 83
Menting, Eleazar, in Channel Train, 56 ; in West Indies, 59
Merbury, Nicholas, 15, 16, 17
Mercer, Alexander, 189 ; at Belleisle, 198
Mercer, C., in Peninsula, 244
Merchant, Noel, 140
Mercier, Captain, at third siege of Gibraltar, 86
Military rank given to Corps, 180
Miller, Corporal, gallantry of, at Badajoz, 300
Minerarii, 11
Minorca, capture of, by the British, 132 ; first siege by French, 176 ; journal of in Royal Artillery Library, 178 ; loss of, 179 ; restoration to British, 200 ; second siege, 209 ; diary of, by A. K., 209 ; surrender, 213
Mirim, Don Bonaventura, at siege of Gibraltar, 98
Molineux, Samuel, 45
Moncrieff at Havannah, 195 ; Brandywine, 204 ; defence of Savannah, 205 ; siege of Charlestown, 206 ; in Holland, 217 ; at Valenciennes, 218 ; killed at Dunkirk, 218
Montagu, F. W., in Crimea, 423 ; prisoner, 448 ; returns to Crimea, 461 ; assault of September 8th, 463 ; on Stores Commission, 465
Monte Video, capture of, and subsequent evacuation, 242
Montreal, capture of, 194
Montresor, James, 166 ; Chief Engineer of America, 771 ; Quebec, 194 ; Bunker's Hill, 203 ; at New York, and examined thereon in House of Commons, 204
Moore, James, Old Establishment, 139
Moore, Jonas, on Special Establishment, 140 ; Chief Engineer of Train to Carthagena, 151 ; at Gibraltar, 70 ; Chief Engineer of Gibraltar, 71 ; letters to, from Board of Ordnance, 72 ; at second siege of Gibraltar, 73
Moore, Thomas, 147
Morgan, Major, in Civil War, 46
Morrison, George, in Flanders, 163
Morse, Robert, at St. Malo, 183 ; Belleisle, 198
Motte, Francis de la, Chief Engineer in Ireland, 59
Mouline, Paul Robert la, in Spanish Train, 128
Mudge, R. Z., in Peninsula, 256
Mulcaster, E., at Roleia and Vimiera, 244; Corunna, 247 ; with Wellesley, 256 ; Torres Vedras, 260 ; Fort Concepçion, 268; Ciudad Rodrigo, 281 ; first siege of Badajoz, 289 ; second siege of Badajoz, 292 ; third siege of Badajoz, 296
Mulcaster, Frederick, 189 ; at Jersey, 207
Mullar, Captain-Lieutenant, at Gibraltar, 75 ; cashiered, 75
Muller, Captain, King's German Engineer, 406
Murray, General, Governor of Minorca during second siege, 209
Murray, Lieutenant J., in Crimea, 423 ; killed, 459
Murray, Lieutenant, wounded at Delhi, 482 ; capture of Lucknow, 490
Mussenden Hill, 147

Napier, Robert, at Relief of Lucknow, 487 ; Chief Engineer at capture of Lucknow, 489 ; commands Division in China War of 1860, 511
Nelson, Captain Horatio, in Corsica, 220
Nepean, Thomas, 216 ; in Corsica, 220
Netherlands fortresses, estimate for, 388
Neville, Lieut. G., in Crimea, 423 ; June 18th, 457 ; killed at Ratghur, 494
Nevy, George, 42
New Orleans, attempt on, 359 ; its failure, 360
Newsome, Assistant Engineer, in Crimea, afterwards R.E., 437
Nicholas, William, in Egypt, 235 ; Calabria, 236 ; Cadiz, 269 ; Barrossa, 272 ; third siege of Badajoz, 296 ; killed at assault, 305
Nicholson, Lothian, in Crimea, 461 ; at destruction of Sebastopol Docks, 471 ; capture of Lucknow, 489
Niel, General, in Crimea, 444
Norton, Robert, 44
Norton, Sir Samuel, 20
Nugent, Lieutenant C., at Bomarsund, 419
Nye, Nathaniel, Chief Engineer in Civil War, 46

Oakes, Captain, Assistant-Engineer at Relief of Lucknow, 487
O'Brien, John, in Flanders Train, 111
Okely, Edward, 46
Oldfield, J., in Holland, 377 ; Brigade-Major at Waterloo, 378 ; his account of plan of Waterloo, 380
Omkaes, Captain, killed at Bois-le-Duc, 44
Operarii, 11
Ord, H., Brigade-Major at Bomarsund, 419

Ord, W. R., at Cadiz, 270
Ordnance Board of Correspondence with Gibraltar, 70 *et seq.*
Ordnance, Master of, 41
Ordnance Train—*see* Trains
Ormonde, Duke of, commands expedition to Cadiz, 117
Ouchterlony, Lieut., in first China War, 500
Owen, H. C., in Crimea, 450 ; wounded, 452

Page, Thomas Hyde, at Bunker's Hill, 203
Pagez, Pierre Gilbert de, in Spanish Train, 128 ; Alicante, 129 ; defence of, 135
Pakenham, Sir E., killed at New Orleans, 363
Palmerston, Lord, on the Netherlands fortresses, 391
Pamplona, blockade of, 332 ; surrender of, 334
Paperill, John, 44, 45
Parker, E., in Egypt, 235
Parker, William, 215
Parkinson, Charles, 156
Pasley, Charles, in Calabria, 236 ; at Copenhagen, 243 ; in Peninsula, 246 ; at Corunna, 247
Passage of the Adour, 352
Paterson, Daniel, at Culloden, 161 ; in Flanders, 163
Patoun, Archibald, Engineer Extraordinary, 156 ; Chief Engineer at Gibraltar, 78
Patton, P., in Peninsula, 243-256 ; first siege of Badajoz, 289 ; second siege of Badajoz, 292 ; killed at, 293
Pawne, William, 19, 20
Payne, Lieutenant, in South America, 242
Peiho forts, attack on, 507 ; failure of, 509
Peirce, Edward Lovet, Chief Engineer in Ireland, 148
Pelham, William, 32 ; Justiciar of Ireland, 35 ; disgrace, 36 ; in Low Countries, and death there, 37
Pemberton, Lieutenant, wounded at Delhi, 482 ; capture of Lucknow, 490
Penn, Captain, Assistant Engineer in Crimea, 457
Penrose, Admiral, commands Naval operations at Passage of the Adour, 354 ; his praise of Engineers, 355
Pensions to Engineer widows, 201
Perie, Sapper John, gains V.C., 469
Péronne, capture of, 384
Peter, the Engineer, 11
Peterborough, Earl of, commands expedition to Barcelona, 124 ; incident at Valencia, 124
Petit, Isaac F., in Newfoundland Train, 136 ; in Spanish Train, 118 ; in Barcelona Train, 119 ; killed at Alicante, 119, 128
Petit, James, in Flanders Train, 111 ; Portugal Train, 119-141
Petit, Lewis, in Channel Train, 56 ; on Establishment, 61 ; at Gibraltar, 65 ; in Portugal Train, 119 ; Chief Engineer of Barcelona Train, 119 ; defends Barcelona, 125 ; Tortosa, 131 ; Lieutenant-Governor of Minorca, 132 ; on New Establishment, 139 ; in Scotland, 145 ; Chief Engineer of Scotch Train, 145
Petit, Peter, 147
Peto and Brassey's railway in Crimea, 437, 443
Pettyt, Thomas, 28
Philips, Lieutenant G. in Crimea, 424 ; at rifle pits, 435 ; invalided, 450
Phillips, Thomas, Third Engineer, 49 ; Second, 54 ; in Barcelona Train, 119 ; on Old Establishment, 139 ; in North of England, 146 ; death, 60
Phillpotts, Lieutenant, at Fort Erie, 358
Phipps, George, 216
Phipps, John, at third siege of Gibraltar, 85, 173
Picurina, fort at Badajoz, 295
Pilkington, Lieutenant, at Flushing, 249
Pinkerton, Henry, 155
Pinkerton, John, 156
Pioneers, Captain of, 21, 41
Piper, Lieutenant, at Torres Vedras, 261 ; forms bridge at Abrantes, 280
Pitts, Matthew, 215
Pitts, T. M., 269 ; Barrossa, 271 ; third siege of Badajoz, 296 ; his account of, 307 ; Salamanca forts, 313 ; battle of, 315 ; Burgos, 319 ; his account of, 329 ; Pamplona, 333 ; Sir Lowry Cole's letter about him, 333
Pompey's Pillar, deciphering inscription, 234
Pontoon Train in France, 385
Popinjay, Richard, 33
Port Mahon—*see* Minorca
Porter, Whitworth, in Crimea, 450 ; invalided, 454
Portmore, Earl of, Governor of Gibraltar at second siege, 72
Potinari, 25, 31
Power, Lieutenant, at Flushing, 249
Powis, Serjeant, assists to rescue Captain Lewis at San Sebastian, 340
Pratt, Lieutenant F. E., sent to Rustchuk,

418; in Crimea, 423; invalided, 454
Prempart, at siege of Bois-le-Duc, 44
Prendergast, Lieutenant H., gains V. C., 494; at Jhansi, 496
Prince Consort, 2
Pringle, John W., at Waterloo, 378; wounded, 381
Pringle, Robert, 215
Pritchard, Lieutenant G., at relief of Lucknow, 487; capture of Lucknow, 489; in China War of 1860, 511
Prize Money, Engineer shares, 59

Quarters, Engineer, at Gibraltar, 76
Quebec, siege of by Wolfe, 190; attack on by French, 194

Railway in Crimea, 443
Rank, Military, given to Engineers, 180
Ranken, J., in Crimea, 461; September 8th, 463; killed by explosion, 471
Ravenhill, P., in Crimea, 423; invalided, 440
Rawlinson, Lieutenant, at Flushing, 249
Raynsford, Lieutenant, at relief of Lucknow, 487
Redknap, Captain, Chief Engineer, at New York, 137; on New Establishment, 139
Reginaldus, Magister, 12
Reid, William, 2; at Torres Vedras, 261; Ciudad Rodrigo, 281; first siege of Badajoz, 289; second siege of Badajoz, 292; third siege of Badajoz, 296; at Salamanca forts, 313; battle of, 315; Burgos, 319; Vittoria, 332; San Sebastian, 336; explores drain, 337; Passage of Adour, 354; New Orleans and Fort Bowyer, 359; Algiers, 392; Letter to Burgoyne, 392
Reyerne, William, 23, 25
Rhodes, C. S., at Copenhagen, 243; at San Sebastian, 336; killed, 346
Richard, Magister, 12
Richards, Jacob, instructions for travelling, 51; diary, 52, 53; third Engineer, 54; Lieutenant-Colonel of Flanders Train, 55; death, 61
Richards, John, character of Carles, 117; Colonel of Barcelona Train, 119; Governor of Alicante, 129; correspondence with his brother Michael, 129; killed at Alicante, 135
Richards, Michael, in Flanders Train, 55; A.Q.M.G. in Flanders, 111; sent with despatches to the Emperor, 113; Chief Engineer, 115; commands Spanish Train, 128; Almanza, 130; Report on Minorca, 133; commands Train for Newfoundland, 136; on Old Establishment, 139; Surveyor General, 142
Richardson, a boy with quick eyesight at siege of Gibraltar, 98
Ridgway, 33
Ridley, Edward, in Flanders Train, 111, 139
Ritso, at Belleisle, 198
Rivers, Charles, Sub-Engineer, 155, 173
Rivers, Earl of, commands Expedition to Spain, 128
Rivers, Lieutenant, at Passage of Adour, 354
Robe, Lieutenant, at Passage of Adour, 354; New Orleans and Fort Bowyer, 359
Roberts, Lieutenant, Assistant Engineer, in Crimea, 437
Roberts, T., at Cadiz, 269
Robertson, Archibald, 189; at Havannah, 195, 215
Robins, Benjamin, at Bergen-op-Zoom, 163
Robinson, Sub-Lieutenant, at Flushing, 249
Robinson, William, Chief Engineer, in Ireland, 48
Rochefort, attack on, 182
Rochester Castle, 9
Rodington, Robert, 19
Rodney, Sir George, at Gibraltar, 89
Roe, Henry, 46
Roleia, battle of, 244
Romer, John, on Old Establishment, 139; in Scotland, 145; at Tilbury, 146; at Battle of Falkirk, 159; wounded at Culloden, 161
Romer, Wolfgang William, Chief Engineer of Channel Train, 56; at New York, 136; taken prisoner, 137
Rooke, Admiral Sir George, 62
Rosetta, attack on, 235
Roseworne, John, in Civil War, 46
Ross, Brigadier, at third siege of Gibraltar 96; commands at sortie, 96 promoted Major-General, 97
Ross, Corporal John, gains V.C., 469
Ross, G., at Flushing, 249; Torres Vedras, 260; first siege of Badajoz, 289; second siege of Badajoz, 292; Ciudad Rodrigo, 281; killed, 282
Ross, P., removed to Indian from British List, 201
Rowley, J., in Holland, 217
Roy, William, on Scotch Survey, 168; reconnaissances made, 174; at Rochefort, 183

Royal Military Artificers at third siege of Gibraltar, 81; execution of, 95; at Torres Vedras, 267; Barrossa, 273; Ciudad Rodrigo, 279; first siege of Badajoz, 290; second siege of Badajoz, 292; third siege of Badajoz, 296
Royal Sappers and Miners at San Sebastian, 336; Washington, 358; New Orleans, 359; Fort Bowyer, 365; misconduct at Waterloo, 379; Péronne, 384; Varna, 416; Bomarsund, 419; Crimea, 424; 7th Company in Crimea, 436; 2nd Company, 437; 1st Company, 450; 9th Company, 454; 11th Company at Kertch, 454; 23rd Company, Journal in India, 498; 10th Company in Hong Kong, 502; 10th, 23rd, and part of 8th Companies in China War of 1860, 511
Rudd, Thomas, 44; Chief Engineer to Charles I., 45
Rudyerd, C. W., in Holland, 222; at Flushing, 249
Rudyerd, Henry, 215
Russell, Lieutenant, at relief of Lucknow, 486
Russian War, 409; troops proceed to Varna, 415; invasion of Crimea, 422; for rest of war *see* Sebastopol, siege of
Rustchuk, bridge over Danube, 418
Rutherford, John, 216; in Holland, 217, 222

St. Albans, 23
St. Malo, failure of attack on, 183
St. Sepulchre, Thomas, 11
Salamanca, siege of forts, 313
Salkeld, Lieutenant, at Delhi, 477; killed blowing in Kashmere Gate, 479
Sanders, C. K., at Waterloo, 379
San Pedro, lines of Cadiz, 270
San Sebastian, description of, 335; siege begun, 336; capture of San Bartolomeo, 337; first assault, 336; suspension of siege, 340; resumption of, 341; capture of Santa Clara, 342; successful assault, 343; castle surrendered, 347
Sappers and Miners, see Royal Sappers and Miners
Savage, Lieutenant, at Passage of Adour, 354
Savannah, defence of by Moncrieff, 205
Schlunt, John, in Flanders Train, 55
Schweitzer, Captain, King's German Engineer, 406
"Scientific Soldiers" World newspaper, 4
Scott, Frederick, 156, 158, 160
Scott, Lieutenant, in Crimea, 454; invalided, 461
Scott, Lieutenant, at relief of Lucknow, 487: at capture of Lucknow, 490
Scratchley, Lieutenant P. H., in Crimea, 461; at capture of Lucknow, 489
Scylla, siege of, 237
Sebastopol, siege of, 424; description of, 427; opening trenches and first bombardment, 430; Inkermann, 433: storm, 435; Tryon's rifle pits, 435; road to the front, 436; railway ordered, 436; description of attacks, January, 1855, 438; Russian advance, 446; occupy Mamelon, 447; development of attack by April, 449; bombardment of April, 451; capture of Egerton's rifle pits, 451; arrival of Sardinian Army, 453; further development of attack, 453; expedition to Kertch, 454; capture of Quarries, 454; failure of attack on June 18th, 457; state of attacks in September, 461; evacuation of South Side, 465; Engineer casualties, 470; stores expended, 470; destruction of docks, 470
Seconding Engineer Officers, 408
Sedley, Lieutenant C. H., in Crimea, 461
Selioke, John, at second siege of Gibraltar, 73
Seniority disputes, 400
Sheffe, Alexander, 17
Shelton, Lieutenant, at Ciudad Rodrigo, 281; killed, 283
Sherrard, David, Engineer on Establishment, 61; in Spanish Train, 118
Shipley, Charles, at second siege of Minorca, 209, 215
Shrewsbury's regulations, 18
Sieges—Calais, 15; Harfleur, 16; Boulogne, 25; Haddington, 28; Leith, 32; Havre, 33; Gibraltar, first, 63; second, 72; third, 82; Venloo, 111; Barcelona, 121; Denia, 130; second, 134; Carthagena, 151; Louisburg first, 156; Minorca first, 176; Louisburg second, 184; Quebec, 190; Havannah, 195; Belleisle, 198; Charlestown, 206; Minorca second, 209; Valenciennes, 218; Bastia and Calvi, 221; Alexandria, 233; Scylla, 237; Copenhagen, 243; Flushing, 249; Ciudad Rodrigo, 277; Badajoz first, 289; second, 291; third, 295; Salamanca forts, 313; Burgos,

318 ; San Sebastian, 336 ; Bomarsund, 420 ; Sebastopol, 424 ; Delhi, 477 ; Lucknow, 489
Silleri, Quebec, battle of, 194
Simmons, J. L. A., at Varna, 412
Skerrett, Colonel, at Tarifa, 273
Skinner, William, at second siege of Gibraltar, 73, 147 ; Chief Engineer, 181 ; inspection of Belleisle, 199 ; death of, 217
Skinner, Thomas, at third siege of Gibraltar, 85
Slack, Daniel, 189
Slade, Captain, at passage of Adour, 354
Sleavon, Corporal, gains V.C. at Jhansi, 496
Slingsby, Francis, 40
Slip, James, 44
Smart, H., at Cape of Good Hope, 241
Smart, Thomas, 216
Smelt, Leonard, in Flanders Train, 155 ; Engineer Extraordinary, 156
Smith, Charles Felix, at Cadiz, 270 ; Barrossa, 272 ; Tarifa, 273 ; Vittoria, 332 ; San Sebastian, 336
Smith, Serjeant, at blowing in of Kashmere Gate, Delhi, 479
Smith, W. D., in Peninsula, 246 ; Corunna, 247 ; Cadiz, 270
Smith, Thomas, 17
Smyth, James Carmichael, at Cape of Good Hope, 241 ; Corunna, 247 ; Holland, 377 ; Waterloo, 378 ; Baronet, 386
Smythe, Colonel R.A., on Royal Engineers, 6
Soldier Artificers at third siege of Gibraltar, 81 ; execution of, 95 ; at Barrossa, 272
Somers, Thomas, with Braddock, 171
Somerville, Lieutenant, in Crimea, 454 ; June 18th, 457 ; death of, 461
Sopwell, nunnery of, 24
Spanish Succession, war of, 110
Speed, Samuel, in Flanders Train, 155 ; Engineer in Ordinary, 156
Sperling, John, in Holland, 368 ; journal, 369 ; Bergen-op-Zoom, 371 ; Waterloo, 378
Spronge, Gerard, 19
Spry, William, 172 ; at second siege of Louisburg, 184
Squire, John, in Holland, 222 ; in Egypt, 230 ; in South America, 242 ; in Peninsula, 246 ; Corunna, 247 ; Walcheren, 248 ; Flushing, 249 ; Torres Vedras, 261 ; first siege of Badajoz, 289 ; second siege of Badajoz, 291 ; third siege of Badajoz, 296 ; death of, at Truxillo, 313
Stanton, E., Commissioner on stores at Sebastopol, 465
Stanway, Frank, in Peninsula, 246 ; under Wellesley, 256 ; Torres Vedras, 261 ; Ciudad Rodrigo, 281 ; first siege of Badajoz, 289 ; second siege of Badajoz, 292 ; third siege of Badajoz, 296 ; attempts to destroy batardeau, 300 ; San Sebastian, 336 ; left there to restore fortress, 348 ; Waterloo, 378
Steinkirk, battle of, 57
Stevens, Captain, Assistant Engineer in Crimea, 437
Stewart, Patrick, at relief of Lucknow, 487
Stewart, W., in Holland, 217
Stokes, Lieutenant O. H., in Crimea, 424 ; invalided, 450
Stopford, J. M., in Crimea, 423
Stovin, Frederick, at New Orleans, 364
Stratton, James, 216
Stratton, Sub-Lieutenant, at Peronne, 384
Straubenzee, Sir C., 3
Stuart, W., at Hong Kong, 502 ; trains volunteer Sappers, 502 ; at escalade of Canton, 503
Survey of Scotland, 167 ; of Ireland, 407
Surveyor-General, rules for, 48
Surveyors of King's Works, 42
Sutherland, A., prisoner at Yorktown, 207 ; in Holland, 217 ; at Valenciennes, 218 ; killed at Lannoy, 219
Suttermann, Lieutenant, King's German Engineers, 406
Swann, Corporal, with Burke on Danube, 417
Swanston, Captain, Assistant Engineer in China War of 1860, 511
Swettenham, Lieutenant, at capture of Lucknow, 489
Symes, Hugh, 61

Talavera, battle of, 257
Tandy, Lieutenant, killed at Delhi, 481
Tapp, Lieutenant, at Torres Vedras, 261 ; San Sebastian, 336 ; wounded, 337 ; New Orleans and Fort Bowyer, 359
Tarifa, defence of, 273
Tarrant, Charles, 172
Taylor, Captain, at Delhi, 477 ; at capture of Lucknow, 489
Tecsdale, H. G., in Crimea, 423 ; killed at the Alma, 424
Telegraph, Electric, in Crimea, 449
Temple, William, 17
Tennant, Lieutenant, at Delhi, 477 ; at capture of Lucknow, 490
Tercene, Eval, Chief Engineer in Civil War, 46

Teson, Upper and Lower, at Ciudad Rodrigo, 279
Tessé commands French force attacking Barcelona, 125
Thackeray, F. M., in Egypt, 235
Thackeray, Lieutenant, at Delhi, 477; capture of Lucknow, 490
Thaine, Lieutenant, at Hong Kong, 502; in China War of 1860, 511
Thernas, John, in Spanish Train, 118
Thomas, John, at L'Orient, 161; in Flanders, 162
Thomas, Old, the Engineer, 44
Thomson, Alexander, in Peninsula, 256; Torres Vedras, 261; Ciudad Rodrigo, 281; first siege of Badajoz, 289; second siege of Badajoz, 292; in Holland, 368; Waterloo, 378; Péronne, 385
Ticonderoga, failure of attack on, 186
Tilbury, fortifications for, 39
Tolby at Belleisle, 198
Tomlinson, Mr., 46
Torres, Condé de las, besieges Gibraltar, 72
Torres Vedras, lines of, 258; Massena advances to, 262; division into districts, 265
Tortosa, defence of, 131
Tournay, fortification of, 20
Townshend, Gilbert, 189; at Belleisle, 198; at second siege of Minorca, 209
Tradesant, John, 44
Traill, Lieutenant, in China War of 1860, 511
Trains, Ordnance, 42; for Flanders, 55; Channel, 56; Low Countries, 110; Spain, 118; Portugal, 119; Barcelona, 119; Newfoundland, 136; Scotland, 145; Flanders, 155; Quebec, 161; Flanders, 162; India, 164
Travelling Cadets, 48
Trench, Lieutenant, at Flushing, 249; Torres Vedras, 261
Trench, Lieutenant Hon. Le Poer, at Hong Kong, 502
Trenchmaster, 21, 41
Trevisi, Jerome de, 25
Tulloch, Lieutenant, Assistant Engineer at defence of Lucknow, 483
Turner, Sub-Lieutenant, at Waterloo, 379
Twiss, Lieutenant, at Ticonderoga, 204; prisoner, 205; in Holland, 222
Tylden, Major, in Holland, 377; commands Pontoon Train in France, 385
Tylden, R., in Crimea, 423; at rifle pits, 452; Quarries, 454; killed, 459
Tylden, W. B., at Constantinople, 410 Brigadier-General, 414; in Crimea, 423; death of, 424

Uhlfeldt, Count of, Governor of Barcelona, 125
Ulmo, Robert de, 13
Unger, Lieutenant, King's German Engineers, 406
Uniform of Engineers in 1782, 226
Upnor, castle of, 31

Vacher, Captain, Assistant Engineer in Crimea, 437
Val, battle of, 163
Valenciennes, siege of, 218
Vane, George, 139
Varna, allied armies at, 416; fire at, 419
Vavasour, H., at Cape of Good Hope, 241; Tarifa, 273
Venloo, siege of, 111
Vetch, J., at Cadiz, 270; Barrossa, 272; third siege of Badajoz, 296; his account of the assault, 305
Vigo, attack on, by Ormonde, 118
Villadarias, Marquis of, at siege of Gibraltar, 64
Vimiera, battle of, 244
Vittoria, battle of, 331
Voord, Mathias Van, 44

Wade, John, 215
Waldivus, Ingeniator, 8
Wales, conquest of, 12
Walker, Lieutenant, at Delhi, 477
Walker, Thomas, 173; at Rochefort, 182
Waller, Thomas, in Flanders, 163; on half-pay, 165
Walsh, Abraham, 189; at Havannah, 195; Belleisle, 198
Warrants, 143, 150; for R.M. Academy, 155, 162; for America, 171; augmentation of Corps, 172; pensions to widows, 201; for Chief Engineer, 201; Captain-Lieutenants to be Captains, 202; Invalid Engineers, 213; for conversion into Royal Engineers, 216; for further augmentations, 217, 397; reductions, 406, 407; abolition of Invalid Engineers, 407
Warrand, Lieutenant, wounded at Delhi, 482
Warren of Woolwich, Military School at, 154
Washington, burning of, 358
Waterloo, battle of, 378
Waters, M. A., at Waterloo, 378

Watson, David, 155, 156; at battle of Falkirk, 159; D.Q.M.G., 160; at Culloden, 161
Watson, G. E., at relief of Lucknow, 487; at capture of Lucknow, 490
Watson, Henry, at Havannah, 195; Belleisle, 198; removed to Indian list, 201
Watson, Justly, at second siege of Gibraltar, 73; siege of Carthagena, 151; Engineer in Ordinary, 156; L'Orient, 161
Webber, Lieutenant, at Jhansi, 495
Wedekind, Captain, at Torres Vedras, 260; first siege of Badajoz, 289; second siege of Badajoz, 292, 406
Wells, J. N., at Roleia and Vimiera, 244; prisoner, 245; Corunna, 247; Flushing, 249; Cadiz, 269; Barrossa, 272; third siege of Badajoz, 296
West, Lieutenant, at passage of Adour, 354; New Orleans and Fort Bowyer, 359
Wharton, Richard, Engineer, 49
Whildale, Thomas, 216
Whinyates, Lieutenant, at Algiers, 392; account of bombardment, 393
White Tower of London, 9
White, A. D., in Holland, 368; Waterloo, 378
Widows, Engineer, pension to, 201
Wilkinson, Thomas, 173
Williams, Bloom, 139
Williams, Griffith, 166
Williams, John, 173; at Martinique, 195; Havannah, 195
Williams, J. A., in Peninsula, 243; under Wellesley, 256; at Torres Vedras, 260; at Ciudad Rodrigo, 281; third siege of Badajoz, 296; Burgos, 319; killed, 322
Williams, Thomas, 46
Williamson, Adam, with Braddock, 171; at Quebec with Wolfe, 190; Martinique, 195; Havannah, 195
Withall, Benjamin, Sub-Engineer on Establishment, 61; in Newfoundland Train, 136; New Establishment, 139
Wittever, Ensign, removed to Indian list, 201
Wolfe, General, at Louisburg, 185
Wolseley, Lord, 3; on Royal Engineers, 5; in Crimea as Assistant Engineer, 437
"World" Newspaper, "Scientific soldiers," 4
Wortham, Lieutenant, at San Sebastian, 336; New Orleans and Fort Bowyer, 359
Wright, Gerald, 46
Wright, P., at Torres Vedras, 267; Ciudad Rodrigo, 281; first siege of Badajoz, 289; second siege of Badajoz, 292; third siege of Badajoz, 296; wounded at Almaraz, 312; New Orleans, 359; killed, 364
Wrottesley, Hon. C., at Bomarsund, 419; killed, 420
Wrottesley, Hon. G., at Gallipoli, 410
Wybault, James, at second siege of Gibraltar, 73; in Spanish Train, 118, 141, 147; Sub-Director, 156
Wynne, Captain, at capture of Lucknow, 489; gallantry at Iron Bridge, 492; death of, 492

Yorke, F. A., in Peninsula, 246; Corunna, 247
York Island, battle of, 204
Yorktown, surrender at, 207
Young, Lieutenant, at capture of Lucknow 490

Zandwarbreiten, bridge of boats at, 368

END OF VOLUME I.

PUBLIC LIBRARIES

Pardon & Sons, Printers, Wine Office Court, Fleet Street, London, E.C.

1/3/70